

MPM Silicones LLC
Sistersville Plant
Permit Number: WVD004325353

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MODULE I STANDARD CONDITIONS

Module I of the permit sets forth the standard conditions that are applicable to all hazardous waste management facilities. The regulations applicable to permitting, Parts 260 through 264, 266, 268, 270 and 279, of Title 40, Code of Federal Regulations, have been incorporated by reference into Sections 2 through 7, 9 through 11, and 14, respectively, of Title 33 Code of State Regulations Series 20, Hazardous Waste Management Rule (HWMR).

(NOTE: The regulatory and/or statutory citations in parentheses are incorporated into the permit by reference.)

I-A EFFECT OF PERMIT (40 CFR 270.4, 270.30(g) and 22-18-8(a) of W.Va. Code)

The Permittee is allowed to manage hazardous waste in accordance with the conditions of the West Virginia Hazardous Waste Management Permit (the state portion of the full RCRA Permit). Any management of hazardous waste not authorized by this permit is prohibited, unless otherwise expressly or specifically exempted by law.

Compliance with the permit during its term constitutes compliance, for purposes of enforcement, with the Hazardous Waste Management Act (Article 18, Chapter 22 of the West Virginia Code), (hereinafter, the ACT), except for those requirements not included in the permit which: 1) become effective by statute; or 2) are promulgated under 40 CFR, Part 268, restricting the placement of hazardous waste in, or on the land; or 3) are promulgated under 40 CFR, Part 264, regarding leak detection systems for new, replacement, and lateral expansions of surface impoundment, waste pile, and landfill units which will be implemented through the procedures of 40 CFR 270.42, Class 1 permit modifications; or 4) are promulgated under Subparts AA, BB, or CC of 40 CFR, Part 265, limiting air emissions.

Issuance of this permit does not convey property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of State or local law or regulations. Compliance with the terms of this permit does not constitute a defense to any order issued or any action brought by the U. S. Environmental Protection Agency (US EPA) under Sections 3008(a), 3008(h), 3013, or 7003 of RCRA; Sections 104, 106(a), or 107, of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (42 U.S.C. '9601 et. seq., commonly known as CERCLA); or any other law providing for protection of public health or the environment.

I-B PERMIT ACTIONS (40 CFR 270.30(f))

This permit may be modified, revoked and reissued, or terminated for cause, as specified in 40 CFR 270.41, 270.42, and 270.43. This permit may also be reviewed and modified by the West Virginia Department of Environmental Protection, Division of Water and Waste Management (DWWWM), consistent with 40 CFR 270.41, to include any terms and conditions determined necessary to protect human health and the environment, and to achieve compliance with 270.32(b)(2). The filing of a request for a permit modification, revocation, and reissuance, or termination, or the notification of planned changes, or anticipated noncompliance on the part of the Permittee does not stay the applicability or enforceability of any permit condition. The Permittee shall not perform any construction associated with a Class 3 permit modification request until such modification request is granted and the modification becomes effective.

I-C SEVERABILITY

The provisions of this permit are severable, and if any provision of this permit, or if the application of any provision of this permit, to any circumstance, is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby.

I-D DEFINITIONS

For the purpose of this permit, terms used herein shall have the same meaning as those set forth in the Act, HWMR, and 40 CFR Parts 260 through 264, 266, 268, 270, and 279, which have been incorporated by reference, unless this permit specifically states otherwise. Where terms are not otherwise defined, the meaning associated with such terms shall be as defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term. The following definitions also apply to this permit.

- D-1 "Director" means the Director of the Division of Water and Waste Management, West Virginia Department of Environmental Protection.
- D-2 "Days" mean except as otherwise provided herein, calendar days;
- D-3 "Hazardous Constituent" means any constituent identified in Appendix VIII of 40 CFR, Part 261, or any constituent identified in Appendix IX of 40 CFR, Part 264;
- D-4 "Release" means any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment.
- D-5 "Secretary" means the Secretary of the West Virginia Department of Environmental Protection.

I-E FAILURE TO SUBMIT RELEVANT AND/OR ACCURATE INFORMATION

Whenever the Permittee becomes aware that it failed to submit any relevant facts in the permit application, or submitted incorrect information in a permit application or in any report to the Director, DWWWM, the Permittee shall notify the Director of such failure within seven (7) calendar days of becoming aware of such deficiency or inaccuracy. The Permittee shall submit the correct or additional information to the Director within thirty (30) days of becoming aware of the deficiency or inaccuracy (40 CFR 270.30(l)(11) and 270.32(b)). Failure to submit the information required in this permit or misrepresentation of any submitted information is grounds for termination of this permit (40 CFR 270.43).

I-F DUTIES AND REQUIREMENTS

F-1 Duty to Comply (40 CFR 270.30(a))

The Permittee must comply with all conditions of this permit, except that the Permittee need not comply with the conditions of this permit to the extent and for the duration, such noncompliance is authorized in an emergency permit. (See 40 CFR 270.61). Any permit noncompliance, except under the terms of an emergency permit, constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

F-2 Duty to Re-apply (40 CFR 270.30(b))

If the Permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the Permittee must apply for and obtain a new permit.

F-3 Permit Duration (40 CFR 270.50 and 270.51)

- a. This permit shall be effective for a fixed term not to exceed 10 years. Each permit that includes a land disposal unit shall be reviewed by the Director five (5) years after the

date of permit issuance and shall be modified as necessary as provided in 40 CFR 270.41.

- b. This permit and all conditions herein will continue in effect beyond the permit's expiration date, if the Permittee has submitted a timely, complete application (see Subpart B of 40 CFR 270) and, through no fault of the Permittee, the Director has not issued a new permit.

F-4 Need to Halt or Reduce Activity Not a Defense (40 CFR 270.30(c))

It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

F-5 Duty to Mitigate (40 CFR 270.30(d))

In the event of noncompliance with the permit, the Permittee shall take all reasonable steps to minimize releases to the environment and shall carry out such measures as are reasonable to prevent significant adverse impact on human health or the environment.

F-6 Proper Operation and Maintenance (40 CFR 270.30(e))

The Permittee shall, at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality control/quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit.

F-7 Duty to Provide Information (40 CFR 270.30(h) and 264.74)

The Permittee shall furnish to the Director, DWWWM, within a reasonable time designated by the Director, any relevant information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The Permittee shall also furnish to the Director, DWWWM, upon request, copies of records required to be kept by this permit.

F-8 Inspection and Entry (40 CFR 270.30(i))

The Permittee shall allow the Director, DWWWM, or an authorized representative, upon the presentation of credentials and other documents as may be required by law to:

- a. Enter at reasonable times upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- c. Inspect, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
- d. Sample or monitor, at reasonable times, for the purposes of assuring permit compliance, or as otherwise authorized by the Act, any substances or parameters at

any location.

F-9 Monitoring and Recordkeeping (40 CFR 270.30(j), 264.73, and 264.74)

- a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
- b. The Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, the certification required by 40 CFR 264.73(b)(9), and records of all data used to complete the application for this permit, for a period of at least three years from the date of the sample, measurement, report, certification, or application. This period may be extended, by request of the Director, at any time.
- c. The Permittee shall maintain records from all groundwater monitoring wells and associated groundwater surface elevations, for the active life of the facility, and for disposal facilities for the post-closure care period as well.

F-10 Reporting Planned Changes (40 CFR 270.30(l)(1))

The Permittee shall give notice to the Director, DWWM, as soon as possible, of any planned physical alterations or additions to the permitted facility.

Such notification does not waive the Permittee's duty to comply with the following:

Pursuant to Section 8(a) of the Act, no person may construct or modify any facility or site for the treatment, storage, or disposal of hazardous waste without first obtaining a permit. Permitting of these alterations or additions to the facility shall be in accordance with the permit modification procedures of 40 CFR 270.41 or 270.42 that have been incorporated by reference into Section 11 of the HWMR.

F-11 Anticipated Noncompliance (40 CFR 270.30(l)(2))

The Permittee shall give advance notice to the Director, DWWM, of any planned changes in the permitted facility, or activity, which may result in noncompliance with permit requirements. Such notice does not constitute a waiver of the Permittee's duty to comply with permit requirements.

F-12 Transfer of Permits (40 CFR 270.30(l)(3), 270.40(a), and 264.12(c))

This permit may be transferred by the Permittee to a new owner or operator only after providing notice to the Director, DWWM, and only if the permit is modified, or revoked and reissued, pursuant to 40 CFR 270.40(b), 270.41(b)(2), or 270.42(a). Before transferring ownership or operation of the facility during its operating life, the Permittee shall notify the new owner or operator, in writing, of the requirements of 40 CFR Parts 264, 268, and 270 (including all applicable corrective action requirements), and shall provide a copy of the RCRA permit to the new owner or operator.

F-13 Compliance Schedule (40 CFR 270.30(l)(5))

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted to the Director, DWWM, no later than fourteen (14) days following each scheduled date.

F-14 Immediate Reporting (40 CFR 264.56(d)(1) and (2))

Immediate Reporting of Emergencies to Local Authorities and the On-Scene Coordinator or the National Response Center.

- a. Pursuant to 40 CFR 264.56(d)(1) and (2), if the facility's emergency coordinator determines that the facility has had a release, fire, or explosion, which could threaten human health or the environment, outside the facility, he/she must report his/her findings as follows:
 - i. If his/her assessment indicates that evacuation of local areas may be advisable, he/she must immediately notify appropriate local authorities. He/she must be available to help appropriate officials decide whether local areas should be evacuated; and
 - ii. He/she must immediately notify either the government official designated as the On-scene Coordinator for that geographical area, (in the applicable regional contingency plan under 40 CFR Part 1510) or the National Response Center (1-800-424-8802).
- b. The report must include:
 - i. Name and telephone number of the reporter;
 - ii. Name, address, and telephone number of the facility;
 - iii. Date, time and type of incident (e.g., release, fire);
 - iv. Name and quantity of material(s) involved, to the extent known;
 - v. The extent of injuries, if any; and
 - vi. The possible hazards to human health or the environment, outside the facility.

F-15 Twenty-four (24) hour Reporting (40 CFR 270.30(l)(6) and 270.33)

The Permittee shall report to the Director, DWW, any noncompliance, which may endanger human health or the environment. Any such information shall be reported orally as soon as possible, but no later than twenty-four (24) hours from the time the Permittee becomes aware of the circumstances.

This report shall include the following:

- a. Information concerning the release of any hazardous waste which may endanger public drinking water supplies; and
- b. Information concerning the release or discharge of any hazardous waste, or of a fire or explosion at the facility, which could threaten the environment or human health outside the facility. The description of the occurrence and its cause shall include:
 - i. Name, address, and telephone number of the owner or operator;
 - ii. Name, address, and telephone number of the facility;
 - iii. Date, time, and type of incident;
 - iv. Name and quantity of material(s) involved;
 - v. The extent of injuries, if any;
 - vi. An assessment of actual or potential hazard(s) to the environment and human health outside the facility, where this is applicable, and;
 - vii. Estimated quantity and disposition of recovered material that resulted from the incident.

A written submission shall also be provided to the Director, DWWM, within five (5) days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period(s) of noncompliance (including exact dates and times); steps taken to minimize impact on the environment; whether the noncompliance has been corrected, and if not, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate and prevent recurrence of the noncompliance. The Permittee need not comply with the five (5) day written notice requirement if the Director, DWWM, waives the requirement. Upon waiver of the five (5) day requirement, the Permittee shall submit a written report within fifteen (15) days of the time the Permittee becomes aware of the circumstances.

F-16 Other Noncompliance (40 CFR 270.30(l)(10))

The Permittee shall report all other instances of noncompliance not otherwise required to be reported on a quarterly basis. The reports shall contain the information listed in Condition I-F-15.

F-17 Submittal of Reports or Other Information (40 CFR 270.30(l)(7), (8), (9), and 270.31)

All reports or other information required to be submitted pursuant to this permit shall be sent to:

Director, Division of Water and Waste Management
601-57th Street
Charleston, WV 25304
ATTN: Talal Fathallah, Hazardous Waste Permitting Unit

I-G BIENNIAL REPORTS

Pursuant to 40 CFR 264.75, the Permittee must prepare and submit a single copy of a biennial report to the Director, DWWM, by March 1, of each even numbered year. The biennial report must be submitted on EPA form 8700-13B. The report must cover facility activities during the previous calendar year and must include:

- G-1 The EPA identification number, name, and address of the facility;
- G-2 The calendar year covered by the report;
- G-3 For off-site facilities, the EPA identification number of each hazardous waste generator from which the facility received a hazardous waste during the year; for imported shipments, the report must give the name and address of the foreign generator;
- G-4 A description and the quantity of each hazardous waste the facility received during the year. For off-site facilities, this information must be listed by EPA identification number of each generator;
- G-5 The method of treatment, storage, or disposal for each hazardous waste;
- G-6 The most recent closure cost estimate under 264.142, and, for disposal facilities, the most recent post-closure cost estimate under 264.144; and,
- G-7 The certification signed by the owner or operator of the facility or his authorized representative.

I-H WASTE MINIMIZATION REPORT

- H-1 Pursuant to 40 CFR 264.75(h), the Permittee must prepare and submit a single copy of a waste minimization report to the Director, DWWM, by March 1, of each even numbered year. The report shall include a description of the efforts undertaken during the year to reduce the volume and toxicity of waste generated.
- H-2 Annually, Permittee shall submit a copy of the certification maintained under 40 CFR 264.73(b)(9) to the Director of DWWM. The certification should detail the ~~on-going~~ongoing "waste minimization program" in place and should be submitted no later than the first week of April every year.

I-I SIGNATORY REQUIREMENT

- I-1 All reports or other information submitted to or requested by the Director, DWWM, his designee, or authorized representative, shall be signed and certified in accordance with 40 CFR 270.11.
- I-2 Changes to Authorization. If an authorization is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, or because a new individual or position has responsibility for the facility's compliance with environmental laws and permits, a new authorization satisfying the requirements shall be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative (40 CFR 270.11(c)).

I-J CONFIDENTIAL INFORMATION

In accordance with Section 11.18 of the HWMR, any information submitted to the Director, Division of Water and Waste Management, pursuant to this permit, may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission in the manner prescribed in Section 11.19.b. and c. of the HWMR.

If no claim is made at the time of submission, the Division of Water and Waste Management shall make the information available to the public. If a claim is asserted, the information shall be treated in accordance with the procedures in Section 11.18 of the HWMR.

I-K DOCUMENTS TO BE MAINTAINED AT THE FACILITY

The Permittee shall maintain, at the facility, until closure is completed and certified by an independent registered professional engineer, all items required by 40 CFR 264.73, including the following documents and all amendments, revisions, and modifications to these documents.

- K-1 Waste Analysis Plan, as required by 40 CFR 264.13, and this permit;
- K-2 Operating Record, as required by 40 CFR 264.73, and this permit;

The following information must be recorded, as it becomes available, and maintained in the operating record until closure of the facility:

- a. Pursuant to 40 CFR 264.73(b)(1), a description and the quantity of each hazardous waste received, and the method(s) and date(s) of its treatment, storage, or disposal, at the facility, in accordance with the instructions contained in Appendix I of 40 CFR 264;
- b. Pursuant to 40 CFR 264.73(b)(2), the location of each hazardous waste within the

facility along with the quantity at each location. For disposal facilities, the location and quantity of each hazardous waste managed in the disposal area must be recorded in the operating record. For all facilities, this information must include cross-references to specific manifest document numbers, if the waste was accompanied by a manifest. {Comment: See 40 CFR 264.119 for related requirements.}

- c. Records and results of waste analyses performed as specified in 40 CFR 264.13, 264.17, 264.314, 264.341, 264.1034, 264.1063, 264.1083, 268.4(a), and 268.7.
- d. Summary reports and details of all incidents that require implementing the contingency plan as specified in 40 CFR 264.56(j);
- e. Records and results of inspections as required by 40 CFR 264.15(d) (this data needs to be kept for only three (3) years).
- f. Monitoring, testing, or analytical data, and corrective action where required by 40 CFR 264, subpart F and 264.19, 264.191, 264.193, 264.195, 264.222, 264.223, 264.226, 264.252-264.254, 264.276, 264.278, 264.280, 264.302- 264.304, 264.309, 264.347, 264.602, 264.1034(c)- 264.1034(f), 264.1035, 264.1063(d)- 264.1063(i), 264.1064, and 264.1082 through 264.1090.
- g. All closure cost estimates under 40 CFR 264.142 and for disposal facilities, all post-closure cost estimates under 40 CFR 264.144.
- h. Pursuant to 40 CFR 264.73(b)(9), a certification by the Permittee, no less often than annually, that the Permittee has a program in place to reduce the volume and toxicity of hazardous waste that is generated to the degree determined by the Permittee to be economically practicable; and the proposed method of treatment, storage, or disposal, is that practicable method currently available to the Permittee which minimizes the present and future threat to human health and the environment.
- i. Records of the quantities, along with date of placement, for each shipment of hazardous waste placed in land disposal units under an extension to the effective date of any land disposal restriction granted pursuant to 40 CFR 268.5, a petition pursuant to 40 CFR 268.6, or a certification under 268.8, and the applicable notice required by a generator under 40 CFR 268.7(a).
- j. For an off-site treatment facility, a copy of the notice, and the certification and demonstration, if applicable, required by the generator or the owner or operator under 40 CFR 268.7 or 268.8;
- k. For an off-site land disposal facility, a copy of the notice, and the certification and demonstration if applicable, required by the generator or the owner or operator of a treatment facility under 40 CFR 268.7 and 268.8, whichever is applicable; and
- l. For an off-site storage facility, a copy of the notice, and the certification and demonstration if applicable, required by the generator or the owner or operator under 40 CFR 268.7 or 268.8; and
- m. For an on-site treatment facility, the information contained in the notice (except the manifest number), and the certification and demonstration (if applicable), required by the generator or the owner or operator under 40 CFR 268.7 or 268.8; and
- n. For an on-site land disposal facility, the information contained in the notice required by the generator or owner or operator of a treatment facility under 40 CFR 268.8, whichever is applicable; and

- o. For an on-site storage facility, the information contained in the notice (except the manifest number), and the certification and demonstration, if applicable, required by the generator or the owner or operator under 40 CFR 268.7 or 40 CFR 268.8.
- K-3 Notifications from generators accompanying each incoming shipment of wastes subject to 40 CFR Part 268 Subpart D, that specify treatment standards, as required by 40 CFR 268.7 and this permit;
- K-4 Corrective action reports and records, if any, must be maintained for at least three (3) years after all corrective action activities have been completed.

I-L DISCLOSURE IN DEED

Pursuant to Section 21 of the Act and Section 12 of the HWMR, the Permittee shall make a notation on the deed or lease to the facility property, or on some other instrument that is normally examined during title search, that will, in perpetuity notify any potential purchaser that the land has been used to manage hazardous waste. Such disclosure shall describe the location upon said property, identifying the type and quantity of hazardous waste and the method of storage, treatment, or disposal with respect to such waste.

I-M LAND DISPOSAL REQUIREMENTS

M-1 GENERAL CONDITIONS

- a. The Permittee shall comply with all applicable self- implementing requirements of 40 CFR Part 268, and all applicable land disposal requirements, which become effective by statute.
- b. A mixture of any restricted waste with non-restricted waste(s) is a restricted waste under 40 CFR Part 268.
- c. Except as otherwise provided by 40 CFR Part 268, the Permittee shall not in any way dilute a restricted waste or the residue from treatment of a restricted waste as a substitute for adequate treatment to achieve compliance with 40 CFR, Part 268, Subpart D, to circumvent the effective date of a prohibition imposed by 40 CFR 268.3.
- d. Pursuant to 40 CFR 268.7, the Permittee shall prepare and maintain a current list of the hazardous waste codes handled by the facility that are identified in 40 CFR 268, Subparts B and C. The list shall include these waste codes, and any associated treatment standards, and shall be updated through the inclusion of new treatment standards, as promulgated or amended. This list shall be provided to the WVDEP, DWWWM representatives, or their designees, upon request.

M-2 TESTING AND RELATED REQUIREMENTS

- a. The Permittee must test, in accordance with 40 CFR 268.7(a), any waste generated at the facility, or use knowledge of the waste, to determine if the waste is restricted from land disposal.
- b. For restricted wastes with treatment standards expressed as concentrations in the waste extract, as specified in 40 CFR 268.40, the Permittee shall test the wastes or waste treatment residues, or extracts of such residues developed using the test Method 1311 described in US EPA Publication SW 846 and referenced in 40 CFR, Part 260.11 (Toxicity Characteristic Leaching Procedure, or TCLP) to assure that the

wastes or waste treatment residues or extracts meet the applicable treatment standards of 40 CFR, Part 268 Subpart D. Such testing shall be performed as required by 40 CFR 264.13 and permit condition II-B.

- c. A restricted waste for which a treatment technology is specified under 40 CFR 268.40 and 268.42(a) may be land disposed after it is treated using that specified technology or an equivalent treatment method approved under the procedures set forth in 40 CFR 268.42(b).
- d. For restricted wastes with treatment standards expressed as concentrations in the waste, as specified in 40 CFR 268.40, the Permittee shall test the wastes or waste treatment residues (not an extract of such residues) to assure that the wastes or waste treatment residues meet the applicable treatment standards of 40 CFR Part 268, Subpart D. Such testing shall be performed as required by 40 CFR 264.13 and permit condition II-B.
- e. The Permittee shall comply with all the applicable notification, certification, and recordkeeping requirements described in 40 CFR 268.7.

M-3 STORAGE PROHIBITIONS

- a. The Permittee shall comply with all applicable prohibitions on storage of restricted wastes specified in 40 CFR Part 268 Subpart E.
- b. Except as otherwise provided in 40 CFR 268.50, the Permittee may store restricted wastes in tanks and containers solely for the purpose of the accumulation of such quantities of hazardous wastes as necessary to facilitate proper recovery, treatment, or disposal provided that:
 - i. Each container is clearly marked to identify its contents and the date each period of accumulation begins; and
 - ii. Each tank is clearly marked with a description of its contents, the quantity of each hazardous waste received, and the date each period of accumulation begins, or such information for each tank is recorded and maintained in the operating records at that facility.
 - iii. The Permittee may store restricted wastes for up to one (1) year unless the WVDEP, DWWWM, or its authorized agent, can demonstrate that such storage was not solely for the purpose of accumulating such quantities of hazardous waste as are necessary to facilitate proper recovery, treatment, or disposal.
 - iv. The Permittee may store restricted wastes beyond one (1) year; however, the Permittee bears the burden of proving that such storage was solely for the purpose of accumulating such quantities of hazardous waste as are necessary to facilitate proper recovery, treatment, or disposal.
 - v. The Permittee shall not store any liquid hazardous waste containing polychlorinated biphenyls (PCBs) at concentrations greater than or equal to 50 ppm unless the waste is stored in a storage facility that meets the requirements of 40 CFR 761.65(b). This waste must be removed from storage and treated or disposed as required by 40 CFR Part 268 within one (1) year of the date when such wastes are first put into storage. Condition I.M-3(iv) above, that allows storage for over one (1) year with specified demonstration, does not apply to PCB wastes prohibited under 40 CFR 268.32.

MODULE II GENERAL FACILITY CONDITIONS

II-A DESIGN AND OPERATION OF FACILITY

The Permittee shall design, construct, maintain, and operate the facility to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste and/or hazardous waste constituents to air, soil, or state waters (including surface and groundwater) which could threaten human health or the environment as required by 40 CFR 264.31.

II-B GENERAL WASTE ANALYSIS

- B-1 The Permittee shall follow the procedures as required by 40 CFR 264.13 and as described in the Waste Analysis Plan, Attachment 1.
- B-2 The Permittee, at a minimum, shall verify the analysis of each generated waste stream as required in 40 CFR 264.13(a)(3) and as part of its quality assurance program, in accordance with the current EPA approved methods of sampling and analysis as outlined in Test Methods for Evaluating Solid Waste, U.S. EPA Publication SW-846, or equivalent methods approved by the Secretary, WVDEP.
- B-3 The Permittee shall maintain calibrated functional instruments, verify the integrity of sampling and analysis by documentations, and perform correct calculations. Throughout all sampling and analytical activities, the Permittee shall use EPA approved quality assurance/quality control (QA/QC), and chain-of-custody procedures.
- B-4 If the Permittee uses a contractor to perform sampling and analysis, the Permittee shall ensure that:
 - a. The laboratories perform analyses according to the current EPA methods outlined in Test Methods for Evaluating Solid Waste, US EPA Publication SW-846 or equivalent methods approved by the Secretary, DEP
 - b. The laboratories participate in a quality assurance/quality control (QA/QC) program equivalent to that which is followed by the State or EPA.
- B-5 For purposes of demonstrating compliance with this permit and the Act, the Permittee shall not use laboratory data generated by a laboratory, which is not certified under the West Virginia laboratory certification program as required by 22-1-15 of the W.Va. Code and Title 47, Series 32 Rule promulgated under this statutory provision.

II-C GENERAL INSPECTION REQUIREMENTS

- C-1 The Permittee must inspect the facility for malfunctions and deterioration, operator errors, and discharges, which may be causing or may lead to:
 - a. release of hazardous waste constituents to the environment; or;
 - b. a threat to human health.

The Permittee must conduct these inspections often enough to identify problems in time to correct them before they harm human health or the environment (40 CFR 264.15(a)).

- C-2 The Permittee must follow a written inspection schedule as outlined in Attachment 2.
- C-3 The Permittee must remedy any deterioration or malfunction of equipment or structures discovered by an inspection as required by 40 CFR 264.15(c).
- a. Where a hazard is imminent or has already occurred, the Permittee must take remedial action immediately.
 - b. The Permittee shall, remedy any deterioration or malfunction of equipment or structure on a schedule, which ensures that the problem does not lead to an environmental or health hazard.
- C-4 The Permittee shall record these inspections and their results in an inspection log (40 CFR 264.15(d)) and the facility operating record as required by permit condition I-K-2. e.

II-D PERSONNEL TRAINING

The Permittee shall conduct personnel training as required by 40 CFR 264.16. This training program shall follow the outline in Attachment 3. The Permittee shall maintain training documents and records as required by 40 CFR 264.16(d) and (e).

II-E PREPAREDNESS AND PREVENTION

E-1 Required Equipment

At a minimum, the Permittee shall equip the facility with the equipment as set forth in the contingency plan, Attachment 4, as required by 40 CFR 264.32.

E-2 Testing and Maintenance of Equipment

The Permittee shall test and maintain the equipment specified in the previous Permit Condition and in Attachment 4 as necessary to assure its proper operation in time of emergency as required by 40 CFR 264.33. The record of tests and maintenance shall be part of the facility operating record and maintained for three (3) years. (40 CFR 264.73(b)(6)).

E-3 Access to Communications or Alarm System

The Permittee shall maintain access to the communications or alarm system as required by 40 CFR 264.32.

E-4 Required Aisle Space

At a minimum, the Permittee shall maintain aisle space as required by 40 CFR 264.35 to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment and decontamination equipment to any area of facility operation in an emergency.

II-F ARRANGEMENTS WITH LOCAL AUTHORITIES (40 CFR 264.37)

- F-1 The Permittee shall comply with the requirements of 40 CFR 264.37 by making a diligent effort to:
- a. Familiarize emergency response agencies which are likely to respond in an emergency

with the location and layout of the facility, chemical and physical properties of hazardous waste managed at the facility and associated hazards, places where facility personnel will normally be working, entrances to and roads inside the facility, and possible evacuation routes as depicted and explained in Attachment 4, and

- b. Familiarize the local ambulance services, fire department, hospitals, and any other local emergency service, with the chemical and physical properties of hazardous waste managed at the facility and the types of injuries or illnesses which could result from fires, explosions, or releases at the facility.

F-2 When a State or local agency declines to enter into the arrangements set forth in 40 CFR 264.37(b), the Permittee shall document the refusal in the operating record.

F-3 The Permittee shall, in accordance with 40 CFR 264.53(b), submit a copy of the approved contingency plan, including all amendments, revisions, or modifications to all local police departments, fire departments, hospitals, and local emergency response teams that may be called upon to provide emergency services. The Permittee shall notify such agencies and the local authorities, in writing, of any amendments of, revisions to, or modifications to the contingency plan.

II-G- CONTINGENCY PLAN

G-1 Implementation of Plan

The Permittee shall immediately carry out the provisions of the approved contingency plan, as set forth in Attachment 4, and follow the emergency procedures described by 40 CFR 264.56 whenever there is an imminent or actual emergency situation (which includes release of hazardous waste or constituents, a fire, or explosion), which threatens or could threaten human health or the environment.

G-2 Copies of Plan

The Permittee shall comply with the requirements of 40 CFR 264.53 in regards to contingency plan distribution.

G-3 Amendments to Plan

The Permittee shall review and immediately amend, if necessary, the contingency plan, as required by 40 CFR 264.54.

G-4 Emergency Coordinator

Emergency Coordinators have been identified Attachment 4. The Permittee shall comply with the requirements set forth in 40 CFR 264.55 and 264.56 regarding the emergency coordinator.

II-H- GENERAL CLOSURE REQUIREMENTS

H-1 Performance Standard

The Permittee shall perform partial and final closure as required by 40 CFR 264.111 and in accordance with the Closure Plan, Attachment 5 to this permit module.

H-2 Amendment to Closure Plan

The Permittee shall amend the Closure Plan in accordance with 40 CFR 264.112(c) whenever necessary.

H-3 Notification of Closure

The Permittee shall submit to the Director a written notification of the partial or final closure in accordance with 40 CFR 264.112(d).

H-4 Schedule and Time Allowed for Closure

- a. Pursuant to 40 CFR 264.112(b)(6), the Permittee has provided a schedule of closure for each hazardous waste management unit and for final closure of the facility in the approved closure plan, as set forth in Attachment 5. For Permittees that use a Trust Fund to establish financial assurance, the schedule must also include an estimate of the expected year of final closure.
- b. Pursuant to 40 CFR 264.113, the Permittee, after receiving the final volume of hazardous waste at a hazardous waste management unit or facility, shall perform one or more of the following within ninety (90) days or an alternate period approved by the Director pursuant to 40 CFR 264.113(a).
 - i. Remove all hazardous waste from the unit or facility.
 - ii. Treat those waste(s), which are permitted in accordance with the permit.
 - iii. Dispose of, on-site, those waste(s) which are permitted in accordance with the permit.
- c. The Permittee shall complete partial and final closure activities in accordance with the approved closure plan and within one hundred-eighty (180) days after receiving the final volume of hazardous wastes at the hazardous waste management unit, or an alternate period contingent on the Director's approval of the demonstration made pursuant to 40 CFR 264.113(b).

H-5 Disposal or Decontamination of Equipment

- a. During partial and final closure, the Permittee must decontaminate and/or dispose of all contaminated equipment, structures, and soils, as required by 40 CFR 264.114 and the approved Closure Plan, as set forth in Attachment 5.
- b. The Permittee shall provide the DWWM the opportunity to split samples by giving an advance notice, of one week, to the assigned DWWM inspector, of any sampling, which is to be done under the closure plan.

H-6 Certification of Closure

Within sixty (60) days of completion of each unit closure or final closure of the Facility, the Permittee must submit to the Director, certification both by the Permittee and by an independent registered professional engineer, that the partial or final closure has been performed in accordance with the specifications in the approved Closure Plan and the terms and conditions of this permit as required by 40 CFR 264.115.

II-I COST ESTIMATE FOR CLOSURE AND POST-CLOSURE

I-1 Cost Estimates

- a. Pursuant to 40 CFR 264.142 and 264.144 the Permittee shall have a detailed written estimate, in current dollars, of the cost of closing the facility and providing post-closure care in accordance with the approved closure plan and post-closure plan, Attachment 5.
- b. The estimate must equal the cost of final closure at the point in the facility's life when the extent and manner of its operation would make closure the most expensive, as indicated by its closure plan.
- c. The estimates must be based on the costs to the owner or operator of hiring a third party to close the facility, and to provide post-closure care. A third party is a party who is neither a parent nor a subsidiary of the owner or operator.
- d. The closure cost estimate may not incorporate any salvage value that may be realized with the sale of the hazardous wastes, facility structures or equipment, and/or other assets associated with the facility at the time of partial or final closure.
- e. The Permittee shall comply with the requirements of 40 CFR 264.144 including the requirements to adjust and revise post-closure cost estimates when necessary.

I-2 Annual Adjustment (264.142(b) and 264.144(b))

During the active life of the facility, the Permittee must adjust the cost estimate for inflation within sixty (60) days prior to the anniversary date of the establishment of the financial instrument used to comply with the requirements of 40 CFR 264.143 and 264.145. If using the financial test or corporate guarantee, the cost estimate must be updated for inflation within thirty (30) days after the close of the firm's fiscal year and before submission of updated information to DEP.

I-3 Adjustment for Changed Conditions

The Permittee must revise the cost estimate whenever there is a change in the facility's closure plan as required by 40 CFR 264.142(c) and/or post-closure plan as required by 264.144(c).

I-4 Availability

The Permittee must keep at the facility the latest cost estimate as required by 40 CFR 264.142(d) and 264.144(d).

II-J INCAPACITY OF OWNER/OPERATORS, GUARANTORS, OR FINANCIAL INSTITUTIONS

The Permittee must notify the Secretary, Department of Environmental Protection, by certified mail, of the commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming the Permittee as debtor, within ten (10) days after commencement of the proceeding, as required by 40 CFR 264.148.

II-K GENERAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE

WASTES

The Permittee shall comply with the requirements of 40 CFR 264.17. Permittee shall follow the procedures for handling ignitable, reactive, and incompatible waste(s) set forth in Attachment 6.

II-L FINANCIAL ASSURANCE REQUIREMENTS

The Permittee shall maintain compliance with 40 CFR 264, Subpart H by providing financial assurance, as required by 40 CFR 264, Subpart H, in at least the amount of the cost estimates required by Permit Condition II-L.

II-M LIABILITY REQUIREMENTS

The Permittee shall comply with the requirements of 40 CFR 264.147 and the documentation requirements of 40 CFR 264.147, including the requirements to have and maintain liability coverage for sudden accidental occurrences in the amount of at least \$1 million dollars per occurrence with an annual aggregate of at least \$2 million, and maintain liability coverage for non-sudden accidental occurrences in the amount of at least \$3 million per occurrence with an annual aggregate of at least \$6 million, exclusive of legal defense costs.

II-N SECURITY

The Permittee shall comply with the security provisions of 40 CFR 264.14.

II-O REQUIRED NOTICES

The Permittee shall comply with the requirements of 40 CFR 264.12.

II-P MANIFEST SYSTEM

The Permittee shall comply with the manifest requirements of 40 CFR 264.71, 264.72, and 264.76.

II-Q CONSIDERATIONS UNDER STATE LAW

Q-1 Groundwater Protection Act

The Secretary, Department of Environmental Protection, under the provisions of the Groundwater Protection Act (Article 12, Chapter 22 of the West Virginia Code), has certified the groundwater regulatory program of the Division of Water and Waste Management (DWWM), Hazardous Waste Management, and thereby authorized DWWM to be a groundwater regulatory agency for the purposes of Article 12.

a. Annual Fee

The Permittee shall pay the annual groundwater protection fund fee in accordance with the regulations codified as Title 47, Code of State Regulations Series 55, that were promulgated under the Groundwater Protection Act. Pursuant to Section 9(a) of this Act, failure to remit groundwater protection fund fees may result in withdrawal or withholding of groundwater certification and, subject the Permittee to the penalties outlined in 22-12-10 of the West Virginia Code.

b. Groundwater Protection Plan

The regulations, Title 47 Code of State Regulations Series 58, promulgated under the Groundwater Protection Act, establish a series of practices, which must be followed by persons subject to regulations by DWWM under the Groundwater Protection Act. Pursuant to Section 4.12.3 of 47 CSR 58, the Groundwater Protection Plan (GPP) must be available on site at all times.

II-R AIR EMISSION STANDARDS FOR PROCESS VENTS (40 CFR 264.1030(c))

The Permittee is subject to the requirements of 40 CFR Part 264, Subpart AA. The Permittee shall comply with 264.1032 through 264.1036 and the emission standards approved and enforced by the Department of Environmental Protection, Division of Air Quality (DAQ).

II-S AIR EMISSION STANDARDS FOR EQUIPMENT LEAKS (40 CFR 264.1050(c))

The Permittee is subject to the requirements of 40 CFR Part 264 Subpart BB. The Permittee shall comply with 264.1052 through 264.1065 and the emission standards approved and enforced by the Department of Environmental Protection, Division of Air Quality (DAQ).

II-T AIR EMISSION STANDARDS FOR TANKS, SURFACE IMPOUNDMENTS, AND CONTAINERS

The Permittee is subject to the requirements of 40 CFR 264 Subpart CC. The Permittee shall comply with 264.1080 through 264.1090 and the emission standards approved and enforced by the Department of Environmental Protection, Division of Air Quality (DAQ).

II-U FLOODPLAIN STANDARD

In the event of imminent flooding, the Permittee shall comply with the floodplain standard of 40 CFR 264.18(b) by implementing the provisions of the Contingency Plan, Attachment 4, to secure or remove hazardous waste from these portions of the facility which are located in the floodplain to prevent washout of hazardous waste.

MODULE III
STORAGE IN CONTAINERS

III-A PERMITTED UNIT IDENTIFICATION

Permittee is permitted to maintain and operate four container storage areas with a capacity of 214,640 gallons as described in Section D of the Part B Permit Renewal Application and as shown on Drawing 1262391. The areas are listed as follows:

- A-1 **Kiln Sample Bottles in Cans Storage Area (Key No. 2)** typically stores five (5) gallon steel buckets of lab samples (bottles up to one (1) gallon size) and other liquid wastes prior to treatment in incinerator. Approximately 688 buckets of five (5) gallon capacity can be stored on this pad. Other types of liquid storage containers are periodically stored on this pad. This storage area measures 20' X 28' (560 ft²) and is located outside the 100-year Floodplain.
- A-2 **RCRA Drum Storage Pad (Key No. 4)** typically stores fifty-five (55) gallon steel and plastic drums as well as other miscellaneous size containers of hazardous waste and nonhazardous wastes for future disposal. Periodically tank trailers (4,000-6,000 gallon) and dumpsters (250-1200 gallon) and other types of liquid storage containers, both hazardous and non-hazardous, may also be stored in this area. The total permitted storage for this area is 132,000 gallons capacity. This storage area measures 100' X 88' (8,800 ft²) and is located within the 100-year Floodplain.
- A-3 **RCRA HW Drum Covered Storage Pad (Key No. 3)** typically stores fifty-five (55) gallon steel and plastic drums. The pad has space for 660 drums of fifty-five (55) gallon capacity. The drums are transferred to this pad from multiple locations within the plant. Both hazardous and non-hazardous wastes in dumpsters, tank trailers, and other containers can be stored at this location. The storage area, measuring 26' X 96' (2,496 ft²), is located outside the 100-year Floodplain.
- A-4 **RCRA HW Drum Uncovered Storage Pad (Key No. 5)** typically stores fifty-five (55) gallon steel and plastic drums. The pad has space for 780 drums of fifty-five (55) gallon capacity. Both hazardous and non-hazardous wastes in dumpsters, tank trailers, and other containers can be stored at this location prior to disposal. The storage area, measuring 26' X 96' (2,296 ft²), is located outside the 100-year Floodplain.

III-B PERMITTED AND PROHIBITED WASTE IDENTIFICATION

- B-1 The Permittee may store the following on-site generated hazardous wastes in containers at the storage units, identified in III-A above, subject to the terms of this Permit and as follows.

Waste Characteristic Name	EPA Hazardous Waste Number(s)
Ignitable Wastes	D001
Corrosive Waste	D002
Reactive Waste	D003

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Waste Characteristic Name	EPA Hazardous Waste Number(s)
Characteristic Waste	D004, D005, D006, D007, D008, D009, D010, D011, D012, D013, D014, D015, D016, D017, D018, D019, D020, D021, D022, D023, D024, D025, D026, D027, D028, D029, D030, D031, D032, D033, D034, D035, D036, D037, D038, D039, D040, D041, D042, D043
F-Listed Waste	F001, F002, F003, F004, F005, F039
P-Listed Waste	All "P" Codes
U-Listed Waste	All "U" Codes

- B-2 Only hazardous wastes having the waste codes identified in Permit Condition III-B-1 may be stored in these permitted areas. The hazardous waste may carry any combination of the codes identified in Permit Condition III-B-1.
- B-3 All hazardous waste categories may be stored on any of the storage areas identified in Permit Condition III-A. The waste stored on each pad is dependent on the container size and the disposition of the waste.
- B-4 Non-hazardous waste stored in containers includes but is not limited to the following:
- Silicone Surfactants
 - Silicone Emulsions
 - Silicone Oils (dimethyl and organo modified, including gum)
 - Organofunctional Silane Esters
 - Polyether
 - Salts
 - Hydrocarbon Oils
 - Miscellaneous Nonhazardous Waste (raw materials, products, intermediates, debris, soil, etc.)

III-C CONDITION OF CONTAINERS

If a container, holding hazardous waste, is not in good condition (e.g., severe rusting, apparent structural defects, etc.) or if it begins to leak, the Permittee shall transfer the hazardous waste from such container to a container that is in good condition, or otherwise manage the waste in compliance with the conditions of this Permit. (40 CFR 264.171)

III-D COMPATIBILITY OF WASTE WITH CONTAINERS

The Permittee shall use a container made of or lined with materials that will not react with and are otherwise compatible with the hazardous waste to be stored, so that the ability of the container to contain the waste is not impaired. (40 CFR 264.172)

III-E MANAGEMENT OF CONTAINERS

- E-1 A container holding hazardous waste must always be kept closed during storage, except when it is necessary to add or remove waste. (40 CFR 264.173(a))

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- E-2 A container holding hazardous waste must not be opened, handled, or stored in a manner, which may rupture the container or cause it to leak. (40 CFR 264.173(b))
- E-3 The Permittee shall not place a container of hazardous waste into storage unless the container is labeled and the generator is identified.
- E-4 The Permittee shall maintain aisle space between container rows to allow for an adequate inspection. (40 CFR 264.35)

III-F CONTAINMENT SYSTEM

- F-1 The Permittee shall maintain the containment systems as required by 40 CFR 264.175 and as described in Attachment 7.
- F-2 The containment systems shall be maintained free of cracks and gaps, and sufficiently impervious to contain leaks and spills along with accumulated precipitation, until the collected material is detected and removed.
- F-3 The Permittee shall remove the collected material (precipitation and/or leaked waste) from the sumps or collection area in as timely a manner as is necessary to prevent overflow of the collection system. If the collected material is a hazardous waste, pursuant to the hazardous waste determination made under 40 CFR 262.11, it must be managed as a hazardous waste in accordance with all applicable requirements of 40 CFR Parts 262 through 266.

III-G INSPECTION SCHEDULE AND PROCEDURES (40 CFR 264.174)

The Permittee shall inspect the container storage areas at least weekly to detect leaking containers and deterioration of containers and the containment system caused by corrosion and other factors.

III-H SPECIAL REQUIREMENTS FOR IGNITABLE OR REACTIVE WASTES (40 CFR 264.176)

- H-1 The Permittee shall not locate containers holding ignitable or reactive waste within 50 feet of the facility's property line.
- H-2 The Permittee shall take precautions to prevent accidental ignition or reaction of ignitable or reactive waste by following the Plant Safety and Health procedures and the procedures listed in Attachment 6.

III-I SPECIAL REQUIREMENT FOR INCOMPATIBLE WASTES (40 CFR 264.177)

- I-1 The Permittee shall not place incompatible wastes or incompatible wastes and materials in the same container unless 40 CFR 264.17(b) is complied with.
- I-2 The Permittee shall not place hazardous waste in an un-washed container that previously held an incompatible waste or material.
- I-3 The Permittee must separate containers of incompatible wastes from each other and other incompatible wastes and materials. The separation may be achieved by providing a dike, berm, wall, or other device.

III-J CLOSURE (40 CFR 264.178)

- J-1 At closure, the Permittee shall remove all hazardous waste and hazardous waste residue from the

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containment system in accordance with the Closure Plan discussed in Attachment 5.

- J-2 Remaining containers, liners, bases and soils containing or contaminated with hazardous waste or hazardous waste residue, must be decontaminated or removed.

III-K AIR EMISSION STANDARDS (40 CFR 264.179)

- K-1 The Federal regulations, 40 CFR 264.179 incorporated by reference into Section 7 of HWMR requires the owner/operator to comply with subpart AA, BB, and CC of 40 CFR 264 for air emissions from hazardous waste placed in containers.
- K-2 A statutory provision of the West Virginia Hazardous Waste Management Act charges the Division of Environmental Protection, Division of Air Quality (DAQ) with administering those parts of the hazardous waste management regulatory program that pertain specifically to air emissions.
- K-3 The absence of specific conditions of subparts AA, BB, and CC in this permit shall not be considered by the Permittee as a shield from complying with the specific rules of DAQ relating to air emissions from hazardous waste placed in containers.

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MODULE IV STORAGE IN TANKS

IV-A PERMITTED UNIT IDENTIFICATION

Five (5) tank systems having a combined storage capacity of 42,000 gallons are being permitted. These tank systems are all located outside of the 100-year Floodplain. Tank systems listed under A-1 through A-3 below are hard piped to rotary kiln incinerator and can also be considered to be feed tanks to the treatment unit. The feed line from the storage tanks to incinerator is covered under the permitted tank systems as ancillary equipment.

A-1 T-768, T-769, T-874

Tank Systems with tanks constructed of carbon steel are used for storing non-corrosive, non-reactive, and ignitable waste solvent mixtures including toluene, alcohol, and other solvent compounds with a specific gravity of 0.80-0.90 are as follows:

- i) Tank System T-768, 10,000-gallon capacity
- ii) Tank System T-769, 10,000-gallon capacity
- iii) Tank System T-874, 10,000-gallon capacity

The tanks are surrounded by a dike wall and concrete pad, large enough to hold the contents of the largest tank in the diked area. The wastes are generated within the plant and are loaded to T-768, T-769, T-873 or T-874 via a piping network for subsequent storage. The wastes from T-768, T-769 and T-874 are sent to the onsite incinerator for incineration or fuel usage, depending on the waste material.

A-2 T-873

T-873 is a vertical storage tank with a capacity of 10,000 gallons, and is located in the northeast corner of the EP solvents tank farm. The tank is contained in a diked tank farm with an epoxy coated concrete bottom. Spills can be contained for effective cleanup.

It is a glass lined steel tank dedicated to store ignitable, corrosive and non-reactive mixtures of toluene, HCL, product lights and heavies, and a trace of methanol and ethanol. Its glass lining is inert to attack from the acid/toluene it stores. The tank may also store non-corrosive, non-reactive, and ignitable waste solvent mixtures including toluene, alcohol, and other solvent compounds with a specific gravity of 0.80-0.90. The waste is generated at the plant, and is then pumped into the tank through a piping network. The waste from T-873 is sent to the onsite incinerator for incineration or fuel usage, depending on the waste material.

A-3 R-72

R-72 is a hydrolysis reactor with a capacity of 2,000 gallons. It is a carbon steel tank with chlorobutyl rubber lining. The tank is dedicated to treat reactive wastes under controlled conditions by feeding the wastes into the reaction tank along with a continuous flow of water. The reaction products typically consist of a non-hazardous hydroxylate solid, organics, and hydrogen chloride (HCL) that are vented to scrubber and then on to treatment in the WWTU. These wastes are generated at multiple manufacturing locations at the plant, and are then pumped into the hydrolysis tank.

IV-B PERMITTED AND PROHIBITED WASTE IDENTIFICATION

The Permittee may store a total volume of 42,000 gallons of hazardous waste in five (5) tank systems and

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treat up to 650 gallons per hour in Tank System R-72, subject to the terms of this permit and as follows:

B-1 Tank Systems, T-768, T-769, T-873 and T-874

The Permittee may store the following wastes in the tank systems identified in IV-A-1 above.

Waste Name	EPA Hazardous Waste Number(s)
Normal Solvents	D001, F003, F005

B-2 Tank System T-873

The Permittee may store the following wastes in Tank System T-873 identified in Permit Condition IV-A-3 above.

Waste Name	EPA Hazardous Waste Number(s)
Acid Solvents	D001, D002, F003, F005
Miscellaneous Ignitable Wastes	D001
Miscellaneous Corrosive Wastes	D002

Other Solid Wastes (Non-Hazardous) may include but are not limited to the following:

Waste Name
Silicone Emulsions
Silicone Oils
Organofunctional Silane Esters
Polyethers
Hydrocarbon Oils
Miscellaneous Waste from MPM Silicones, LLC facilities (raw materials, products, intermediates, etc.)

B-4 Tank System R-72

The Permittee may treat up to 650 gallons per hour of the following wastes in Tank System R-72 identified in permit condition IV-A-4above.

Waste Name	EPA Waste Number(s)
Water Reactive Chlorosilanes	D001, D002, D003
Miscellaneous Reactive Wastes	D001, D002, D003
Other Listed Waste Meeting Land Disposal Standards	e.g. F003, F005

Other solid wastes (Non-Hazardous) may include but are not limited to Miscellaneous Silane Esters.

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B-5 The Permittee is prohibited from storing or treating hazardous wastes, in tank systems that are not identified in Permit Condition IV.B.1 through IV.B.4, unless the tank is managed according to 40 CFR 262.34.

IV-C DESIGN AND CONSTRUCTION OF TANK

The Permittee shall maintain the tank, including shell thickness, in accordance with the management practices included in Attachment 8. The Permittee shall not store and/or treat waste in excess of the maximum capacities for each individual tank identified in the preceding table. The Permittee shall also ensure that the tanks have sufficient structural strength, waste compatibility, and corrosion protection that it will not collapse, rupture or as per 40 CFR 264.191.

IV-D PROTECTION FROM OVERFILLING

The Permittee shall prevent overfilling of tank by the methods specified in Attachment 8 and summarized as follows:

Tank Systems	Type of Control
T-768, T-769, T-873, and T-874	Operating Procedure, a level indicator triggers an automatic valve to close when the level records 85%, a redundant high-level switch activates a high-level alarm at 90% and also activates the automatic valve to close at 90% of tank capacity.
R-72	Operating Procedure, a level indicator, a high-level alarm activates at 78%, the level control valve fails open when the LI sees 85% dumping the tank contents, a redundant high-level switch also activates a high/high level alarm at 85% and also activates the level control valve to fully open.

IV-E OPERATING REQUIREMENTS

- E-1 The Permittee shall not place hazardous wastes or treatment reagents in the tank system if it could cause the tank, its ancillary equipment, or a containment system to rupture, leak, corrode, or otherwise fail (40 CFR §264.194(a))
- E-2 The Permittee shall prevent spills and overflows from the tanks or containment systems using the methods described in Permit Attachment 8(40 CFR §264.194(b))

IV-F RESPONSE TO LEAKS OR SPILLS

In the event of a leak or a spill from the tanks, from a secondary containment system, or if a tank system becomes unfit for continued use, the Permittee shall remove the system from service immediately and complete the following actions 40 CFR §264.196 (a)-(f).

- F-1 Stop the flow of hazardous waste into the tanks and inspect the tanks to determine the cause of the release.
- F-2 Remove waste and accumulated precipitation from the system within twenty-four (24) hours of the detection of the leak to prevent further release and to allow inspection and repair of the system. If the Permittee finds that it will be impossible to meet this time frame, the Permittee shall notify the Director, DWWM, and demonstrate that a longer time is required.

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If the collected material is a RCRA hazardous waste, it must be managed in all applicable requirements of 40 CFR, Parts 262 through 264. The Permittee shall note that if the collected material is discharged through a point source to US waters or to a POTW, it is subject to requirements of the Clean Water Act. If the collected material is released to the environment it may be subject to reporting under 40 CFR, Part 302.

- F-3 Contain visible releases to the environment. The Permittee shall immediately conduct a visual inspection of all releases to the environment and, based on that inspection: 1) prevent further migration of the leak or spill to soils or surface water and, 2) remove and properly dispose of any visible contamination of the soil or surface water.
- F-4 Close the system in accordance with the Closure Plan, Permit Attachment 5, unless the following actions are taken:
- For a release caused by a spill that has not damaged the integrity of the system, the Permittee shall remove the released waste and make any necessary repairs to fully restore the integrity of the system before returning the tank system to service.
 - For a release caused by a leak from the primary tank system to the secondary containment system, the Permittee shall repair the primary system prior to returning it to service.
 - For a release to the environment caused by a leak from the tank system that is below ground and does not have secondary containment, the Permittee must provide this component with secondary containment that meets the requirements of 40 CFR §264.193 before the component can be returned to service.
 - For a release to the environment caused by a leak from the above-ground portion of the tank system that does not have secondary containment, and can be visually inspected, the Permittee shall repair the tank system before returning it to service.
 - For a release to the environment caused by a leak from the portion of the tank system component that is not readily available for visual inspection, the Permittee shall provide secondary containment that meets the requirements of 40 CFR §264.193 before the component can be returned to service.
 - If the Permittee replaces a component of the tank system to eliminate the leak, that component must satisfy the requirements for new tank systems or components in 40 CFR §264.192 and 40 CFR §264.193.
- F-5 For all major repairs to eliminate leaks or restore the integrity of the tanks, the Permittee must obtain a certification by an independent, qualified, registered, professional engineer that the repaired system is capable of handling hazardous wastes without release for the intended life of the tanks before returning the to service. Examples of a major repair are: installation of an internal liner, repair of a ruptured primary containment tank, or secondary containment vessel.

IV-G SECONDARY CONTAINMENT

The Permittee shall maintain and operate the secondary containment system, in accordance with the descriptions contained in Permit Attachment 8, and in accordance with 40 CFR §264.193(b) through 264.193(f) for all the permitted tank systems.

IV-H INSPECTION SCHEDULE AND PROCEDURES

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- H-1 The Permittee shall inspect the tanks, in accordance with the Inspection Schedule, Permit Attachment 2, and shall complete the items in Permit Conditions III.H.2 as part of those inspections.
- H-2 The Permittee shall inspect the overfill controls, in accordance with the Attachment 2 (40 CFR §267.199(a))
- H-3 The Permittee shall inspect the following components of the tanks system, at least once, each operating day (40 CFR §264.195(b))
- a. Above-ground portions of the tanks, if any, to detect corrosion or releases of waste;
 - b. Data gathered from monitoring and leak detection equipment (e.g., pressure or temperature gauges, monitoring wells) to ensure that the tanks are being operated according to its design;
 - c. Construction materials and the area immediately surrounding the externally accessible portion of the tanks, including the secondary containment system, to detect erosion or signs of releases of hazardous waste (e.g., wet spots, dead vegetation, etc.).
- H-4 The Permittee shall document compliance with Permit Conditions IV.H.2. through IV.H.3 and place this documentation in the operating record for the facility (40 CFR §264.195(d)).

IV-I RECORDKEEPING AND REPORTING

- I-1 The Permittee shall report to the Director, DWWM, within 24 hours of detection, when a leak or spill occurs from the tank system or secondary containment system to the environment. Per 40 CFR §264.196(d)(1), a leak or spill of one pound (1 lb.) or less of hazardous waste, that is immediately contained and cleaned-up, need not be reported, and releases that are contained within a secondary containment system need not be reported (40 CFR §264.196(d)(2)). If the Permittee has reported the release pursuant to 40 CFR, Part 302, this report satisfies the requirements of this Permit Condition (40 CFR 264.196(d)(1)).
- I-2 Within thirty (30) days of detecting a release to the environment from the tanks, or secondary containment system, the Permittee shall report the following information to the Director of DWWM (40 CFR §264.196(d)(3)).
- a. Likely route of migration of the release;
 - b. Characteristics of the surrounding soil (including soil composition, geology, hydrogeology, and climate);
 - c. Results of any monitoring or sampling conducted in connection with the release. If the Permittee finds it will be impossible to meet this time period, the Permittee should provide the Director, DWWM, with a schedule of when the results will be available. This schedule must be provided before the required thirty (30) days submittal period expires;
 - d. Proximity of down gradient drinking water, surface water, and populated areas; and
 - e. Description of response actions taken or planned, 40 CFR §267.200(d)(2).
- I-3 The Permittee shall submit to the Director of DWWM all certifications of major leaks within seven (7) days from returning the tank system to use (40 CFR §264.196(f)).
- I-4 The Permittee shall obtain, and keep on file at the facility, the written statements by those persons required to certify the design and installation of the tank system (40 CFR §264.192(g)).

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IV-J CLOSURE AND POST-CLOSURE CARE

- J-1 At closure of the tank system(s), the Permittee shall follow the procedures in the Closure Plan, Permit Attachment 5 (40 CFR 264.197(a)).
- J-2 If the Permittee demonstrates that not all contaminated soils can be practically removed or decontaminated, in accordance with the Closure Plan, then the Permittee shall close the tank system(s) and perform Post-Closure care following the contingent procedures in the Closure Plan and in the Post Closure Plan, Permit Attachment 5 (40 CFR §264.197(b)).

IV-K SPECIAL TANK PROVISIONS FOR IGNITABLE OR REACTIVE WASTES

- K-1 The Permittee shall not place ignitable or reactive waste in the tank system or in the secondary containment system, unless the procedures specified in Permit Attachment 8 are followed (40 CFR 264.198(a)).
- K-2 The Permittee shall comply with the requirements for the maintenance of protective distances between the waste management area and any public ways, streets, alleys, or an adjoining property line that can be built upon, as required in Tables 2-1 through 2-6 of the National Fire Protection association's "Flammable and Combustible Liquids Code" (2000). (40 CFR 264.198(b)).

IV-L [<http://apps.sos.wv.gov/adlaw/csr/readfile.aspx?DocId=26568&Format=WORD&web=1>] **HYPERLINK**

- L-1 The Permittee shall not place incompatible wastes, or incompatible wastes and materials, in the same tank system or the same secondary containment system, unless the procedures specified in Permit Attachment 8 and 40 CFR 264.199(a) are followed.
- L-2 The Permittee shall not place hazardous waste in a tank system that has not been decontaminated and that previously held an incompatible waste or material, unless the requirements of Permit Condition IV.L.1. are met (40 CFR 264.199(b)).

IV-M AIR EMISSION STANDARDS (40 CFR 264.200)

- M-1 The Federal regulations, 40 CFR 264.200 incorporated by reference into Section 7 of HWMR requires the owner/operator to comply with subpart AA, BB, and CC of 40 CFR 264 for air emissions from hazardous waste placed in a tank.
- M-2 A statutory provision of the West Virginia Hazardous Waste Management Act charges the Department of Environmental Protection, Division of Air Quality (DAQ) with administering those parts of the hazard waste management regulatory program that pertain specifically to air emissions.
- M-3 The absence of specific conditions of subparts AA, BB, and CC in this permit shall not be considered by the Permittee as a shield from complying with the specific rules of DAQ relating to air emissions from hazardous waste placed in a tank.

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MODULE V SURFACE IMPOUNDMENTS

V-A GENERAL DESCRIPTION.

The Permittee operates two (2) hazardous wastewater surface impoundments known as "Diversion Basin" previously as Panic pond and "Equalization Basin". These are a retrofitted minimum technology surface impoundments used for treatment and storage that is described as following:

- a. Settling of solids and equalization of the plant process sewer stream
- b. Receiving process sewer water during abnormal conditions (these include high acid load, high organic load, hydraulic surges, and equipment failures).

Total capacity of the impoundments is 2.19 million gallons. The impoundments are located in the northern portion of the plant in the EP area. The Equalization Basin is operated continuously whereas the Diversion Basin is used to accommodate operational emergencies. The wastewater from the primary clarifier flows into the Equalization Basin for equalization of the plant process sewer stream. Estimated retention time is 4 hours.

A nine-foot concrete wall separates these two impoundments. The wall is constructed of reinforced concrete with an epoxy and flake tar coating. The surface impoundments meet the minimum RCRA design requirements for leak detection and collection. The surface impoundments are constructed from their floor downward to native earth. Brief details of the design are as follows:

- 4 inches of concrete
- 2 inches of sand
- Plastic liner consisting of 0.100-inch thickness of high-density polyethylene
- 12 inches of sand with liquid collection piping
- Plastic liner consisting of 0.100-inch thickness of high-density polyethylene
- 26 inches of compacted clay liner

The Diversion Basin and Equalization Basin surfaces impoundments are designed, operated, and maintained to preclude overtopping from wind or wave action and from precipitation. Wind or wave action would not cause overtopping due to the degree of freeboard maintained and size the surface impoundment. An eighteen-inch sluice gate valve controls flow through a pipe in the wall. This gate could be opened to use the normally empty impoundment as a Diversion Basin, if necessary.

Total generation rate of wastewater from the plant and Kiln scrubber is about 4,000 gpm, which is piped to the Equalization Basin. After the solids are segregated, the wastewater is gravity fed to the UNOX Biological Reactor for skimming of oils and for biological treatment. Capacity of the UNOX Reactor to process wastewater is 6.5 million gallons per day. The flow to the Equalization Basin both from the plant and Kiln unit can be stopped and/or re-routed to the Diversion Basin if necessary.

V-B PERMITTED AND PROHIBITED WASTE IDENTIFICATION.

The Permittee may manage hazardous wastes under the following conditions:

- B-1. Permittee may treat and store of the following hazardous waste in the impoundments as referred in section V-A:

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Hazardous Wastes	Hazardous Constituents	Hazardous Waste Code
(1) Wastewater containing spills of chemicals. (2) Wastewater from the rinsing of empty drums that remain hazardous (e.g. P028)	Typical Constituents Toluene Benzene Acrylonitrile Chloromethane Chloroethane Methylene Chloride Methyl Alcohol Spills that may be ignitable, corrosive, and/or reactive May contain any of the waste codes listed in Part A that can be otherwise legally managed in the regulated units.	U220, F005 D018 U009 D021, U037 U045 U080 U154 D001 D002 D003 All listed waste codes associated with the regulated units.
(3) Leachate from Landfills	Any of the constituents identified within this permit.	F039
(4) Wastewater from HW Incinerator	(Derived from rule)	All listed waste codes associated with the incinerator
(5) Contaminated Media	Various (derived from rule)	All waste codes identified in the permit.

- B-2. Permittee is prohibited from treating, or disposing of any hazardous waste in the surface impoundments, which is not identified in Permit Condition V.B.1, except in the event of a spill or upset in the plant that results in material entering the process sewer that must be managed with the aid of the surface impoundments.
- B-3. Permittee shall comply with the special provisions for Surface Impoundments set forth in Sections H-K of this Permit Module, and Subpart K of 40 CFR Part 264.
- B-4. Routine process wastewater flows when combined with other wastewater streams making them hazardous per 40 CFR 261.3 (Mixture Rule) may be treated and disposed in the surface impoundments.

V-C DESIGN, CONSTRUCTION AND OPERATING REQUIREMENTS.

- C-1 No new design or construction work is required for the Impoundments.
- C-2 The Permittee shall maintain at least two feet of freeboard between the maximum wastewater surface elevation and minimum elevation of the top of the embankment or dike surrounding the Surface Impoundments. The Permittee shall maintain the effluent pumping system, sumps, and gravity overflow piping as necessary to prevent overtopping of impoundments [40 CFR 264.221(g)]

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- C-3** The Permittee shall design, construct, operate, and maintain the surface impoundments with sufficient structural integrity to prevent massive failure of the dikes. In ensuring structural integrity, it must not be assumed that the system will function without leakage during the active life of the unit. [40CFR §264.221(h)]
- C-4** In response to a release of waste from the Surface Impoundments as a result of storm wave action, the Permittee shall implement the following, in addition to the standard responses to a spill or other release of hazardous wastes specified in the Contingency Plan (Permit Attachment 4):
1. The Permittee shall provide an overall preliminary assessment of the release, including photographs and analyses of soil and water samples in the vicinity of the release (if available) and an estimate of the volume of waste released to the environment, in writing, within two weeks after the release occurred.
 2. The Permittee shall submit a plan for sampling and analysis of soil and water samples adequate to determine the extent of contamination, including all hazardous constituents, which may be present in the released wastes. The plan shall be submitted to Director DWWWM for approval or modification, at the same time as the preliminary release assessment. The Permittee shall implement the sampling and analysis plan as directed by EPA.
 3. The Permittee shall prepare additional release assessment and corrective measure plans as directed by DWWWM, if necessary.

V-D. LEAK CONTROL PROCEDURES

- D-1.** The Permittee shall remove a Surface Impoundment from service if the level of liquids in the impoundment suddenly drops and the drop is not known to be caused by changes in the flows into or out of the impoundment [40 CFR §264.227(b)(6)]. The Permittee shall then, in accordance with the contingency plan prepared for such events, immediately shut off the flow of wastes into the impoundment, contain any surface leakage and take other steps necessary to prevent catastrophic failure. In case of a minor dike leak, the Permittee may continue treatment of the materials in the impoundment provided that it immediately investigates and corrects the problem by containing any surface leakage and shuts the flow of waste into the impoundment. The Permittee must then notify the DWWWM of the problem in writing within seven (7) days after detecting the problem, and perform repairs or other measures as necessary to comply with 40 CFR 264.227(a)-(b).
- D-2.** The Permittee may return the impoundment to service only if the portion of the impoundment, which was failing, is repaired and the following steps are taken: [40 CFR §264.227(d)]
- a. If the impoundment was removed from service as the result of actual or imminent dike or side slope failure, the structural integrity of the dike or side slope must be recertified by a qualified, registered professional engineer, in accordance with 40CFR §264.226(c).
 - b. If the impoundment was removed from service as the result of a sudden drop in the liquid level, the repaired liner system must be certified by a qualified, registered professional engineer as meeting the design, construction and Construction Quality Assurance specifications. [40 CFR§264.227(d)(2)(ii)]
- D-3.** A Surface Impoundment that has been removed from service in accordance with the requirements of 40 CFR §264.227, and is not being repaired, must be closed in accordance with the provisions of 40 CFR §264.228. [40 CFR §264.227(e)]

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V-E. INSPECTION SCHEDULES AND PROCEDURES.

- E-1.** The Permittee shall inspect the Surface Impoundments in accordance with applicable and approved inspection schedules, provided as Permit Attachment 2, and document the inspection in a log maintained on site. While the Surface Impoundments are in operation, they must be inspected weekly and after storms to detect evidence of any of the following: deterioration, malfunctions, or improper operation of overtopping control systems.
- E-2.** If a Surface Impoundment is removed from service for more than six (6) months, then prior to returning to service, the Permittee shall obtain a certification from a qualified, registered professional engineer that the Surface Impoundment's dike or side slope, including that portion of any dike or side slope that provides freeboard, has structural integrity. The certification must establish that the dike or side slope:
- Will withstand the stress of the pressure exerted by the types and amounts of wastes to be placed in the Surface Impoundment; and
 - Will not fail due to scouring or piping, without dependence on any liner System included in Surface Impoundment construction [40 CFR §264.226(c)].

V-F. RECORDKEEPING AND REPORTING.

- F-1.** The Permittee shall notify the DWWWM, in writing, within seven (7) days from detecting either a leak in the dike or a sudden drop in the liquid level (and the drop is not caused by changes in the flows into or out of the impoundment). [40 CFR §264.227(b)(6)]
- F-2.** The Permittee shall maintain impoundment inspection records in the facility Operating record for at least three years from the date of the inspection. [40 CFR §264.15(d)]

V-G. CLOSURE AND POST-CLOSURE CARE.

The Permittee shall conduct closure and post closure activities in accordance with 40 CFR §264.228 and Closure/Post-Closure Permit Modules, as appropriate.

V-H. SPECIAL SURFACE IMPOUNDMENT PROVISIONS FOR IGNITABLE OR REACTIVE WASTES.

The Permittee shall not place ignitable or reactive waste in the Surface Impoundments unless the requirement of 40 CFR §264.229 (a), (b), or (c) are met.

V-I. SPECIAL SURFACE IMPOUNDMENT PROVISIONS FOR INCOMPATIBLE WASTES

The Permittee shall not place incompatible wastes in the Surface Impoundment. [40 CFR §264.230]

V-J. SPECIAL SURFACE IMPOUNDMENT PROVISIONS FOR HAZARDOUS WASTES F020, F021, F022, F023, F026 AND F027 [HWSA]

The Permittee shall not place hazardous wastes F020, F021, F022, F023, F026, or F027 in the Surface Impoundment. [40 CFR §264.231]

V-K. SPECIAL SURFACE IMPOUNDMENT PROVISIONS FOR HAZARDOUS WASTES RESTRICTED FROM SURFACE IMPOUNDMENT UNITS [HWSA]

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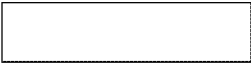
MPM Silicones LLC
Sistersville Plant
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Wastes may be placed in the Surface Impoundments without being pretreated to below the applicable treatment standards prescribed by 40 C.F.R. Part 268 including, but not limited to 40 C.F.R. §268.40 and 40 C.F.R. §268.48, provided that the requirements of 40 CFR 268.4 are met.

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V-L. AIR EMISSION

- L-1 A statutory provision of the West Virginia Hazardous Waste Management Act charges the Division on Environmental Protection, Division of Air Quality (DAQ), with administering those parts of hazardous waste management regulatory program that pertain specifically to air emissions.



MODULE VI OPERATING LANDFILL

VI-A PERMITTED UNIT IDENTIFICATION

Landfill #2 with 623,000 cubic yard total capacity and currently projected to have approximately 512 years remaining capacity is located in the head of a hollow on the wooded hillside portion of the facility and is used mainly to dispose of dewatered sludges from wastewater treatment and to a lesser extent various on-site generated wastes, both hazardous and non-hazardous.

The initial construction was completed in 1979 to allow 60 million gallons of disposal capacity. This work included construction of the impoundment's embankment, a dike at the lower end of hollow, a three-foot compacted clay liner, and a drainage/leachate collection and removal system. The leachate/leakage collection system consists of sand drainage layer one foot thick above and below the clay liner. Drain lines installed in these layers of sand allow the leachate/leakage to flow by gravity to the facility's wastewater treatment plant. The leachate is collected and treated on-site in an NPDES permitted WWTU.

The second phase of construction, completed in 1985, consisted of reinforcing portions of the original three-foot clay liner with 0.06-inch thickness of high-density polyethylene (HDPE) plastic liner and extending the liner system from the original 825 ft. elevation up the sidewalls to 840 ft. elevation. This extended liner system consisted of a 0.1-inch thickness HDPE underlain with compacted clay ranging from two to six feet thickness. Additionally, to protect the integrity of liner, the landfill is equipped with drainage pipes on sides. These pipes are installed to minimize any seepage traveling under the liner.

This second phase of construction increased disposal capacity to 112 million-gallons for the impoundment (351 acre-feet disposal capacity for landfill.)

An expansion project in 2015 increased the capacity of the landfill by approximately 12% to its current 623,000 cubic yards by revising the spillway and adding a concrete wall to the top of the dam.

Although originally designed as a landfill, the unit was initially operated under RCRA interim status as a surface impoundment for disposal of pumpable sludges from the wastewater treatment plant. Prior to the permitting of the facility in 1988, Union Carbide Corporation petitioned the state RCRA regulatory agency for the impoundment to be reclassified as a landfill and to be permitted as such. The agency granted the request and the unit was permitted as a landfill under the state portion of the full RCRA permit. Only a small portion of the landfill is dedicated to disposal in segregated cells. Asbestos containing wastes are disposed of in a segregated cell, while the dewatered wastewater treatment sludges and other on-site generated wastes are disposed of in the remaining portion without segregation.

VI-B PERMITTED AND PROHIBITED WASTE IDENTIFICATION

B-1 The Permittee may dispose of hazardous waste meeting the treatment standards of 40 CFR 268 as listed in the following on site generated wastes in Landfill #2, subject to the terms of this permit and as follows:

Waste Name	EPA Hazardous Waste Number(s)
Dewatered sludge from wastewater treatment plant	F005, F039, and all other hazardous waste codes managed at facility
Ash, refractory brick, and other residues from Incinerator	All hazardous waste codes managed at facility
Remediation Waste consisting of soils and debris	All hazardous waste codes managed at facility

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Waste Name	EPA Hazardous Waste Number(s)
Miscellaneous waste from production of silicones and silanes, including but not limited to materials such as scrubber packing.	All hazardous waste codes managed at facility

Other solid wastes (non-hazardous)

Waste Name	Description
Asbestos Waste	Friable and nonfriable asbestos materials
Filter Cake	A manufacturing process waste containing small amounts of residual products with the remainder consisting of filtering aids (diatomaceous earth, Fullers earth, and cellulose).
Miscellaneous solid wastes	This category includes miscellaneous plant refuse and trash; crushed hoses, buckets, and drums; discarded equipment, and spill cleanup materials.

- B-2 The Permittee is prohibited from disposing of any waste in Landfill #2 that have not been identified in Permit Condition VI-B-1 unless prior notification has been made to the West Virginia Department of Environmental Protection.

VI-C OPERATING AND MAINTENANCE OF LANDFILL

- C-1 The Permittee shall operate and maintain the leachate collection system above the three-foot clay liner and the leakage collection system below the clay liner to ensure that system is not clogged and functioning as designed. [40 CFR §264.301(a)(2)(ii)]
- C-2 The Permittee shall comply with Section 4.13.b of the Code of State Regulations Title 33 Series 1, "Solid Waste Management Rule", and Permit Attachment 9 when disposing of asbestos waste, which is allowed under permit condition VI-B-1.
- C-3 The Permittee shall operate and maintain a run-on control system in accordance with the design plans specifications and operating practices contained in Permit Attachment 9. The run-on control system shall be maintained to prevent flow onto the active portion of the landfill during peak discharge from at least a 25-year storm [40 CFR §264.301(g)].
- C-4 Precipitation that falls onto the active portion of the landfill and any run-on entering active portion shall be managed as F039. The Permittee shall pump the accumulated liquids in a timely manner. [40 CFR §264.301(i)]
- C-5 The Permittee shall cover or otherwise manage the landfill to control wind dispersal of particulate matter, in accordance with the methods specified in Permit Attachment 9. [40 CFR 264.301(j) and Letter from WVDNR 6/28/1989]

VI-D MONITORING AND INSPECTION

- D-1 While the landfill is in operation, the Permittee shall inspect the landfill weekly and after storms to detect evidence of deterioration, malfunctions, or improper operations of run-on and run-off control systems, and proper functioning of leachate/leakage collection and removal system. [40CFR §264.303b)]
- D-2 The Permittee shall visibly verify the presence or absence of flow of liquid from the leachate/leakage

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collection system at least monthly during the active life and closure period of the landfill. [40 CFR §264.301(a)(2)]

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VI-E SURVEYING AND RECORD KEEPING

- E-1 The Permittee shall maintain a map of the landfill with the exact location and dimensions, including depth, with respect to permanently surveyed benchmarks. [40 CFR 264.309]
- E-2 Due to the nature of the No. 2 Landfill operation, the type and quantity of waste placed in the landfill will be recorded in the operating record but the location of the waste will not be a requirement. [Letter from WVDNR 6/28/1989].

VI-F LIQUIDS

- F-1 The Permittee shall not place bulk or non-containerized liquid wastes or waste containing free liquids in a landfill [40 CFR §264.314(b)]
- F-2 The Permittee shall demonstrate the absence of free liquids in either a containerized or bulk waste by "Method 9095 (Paint Filter Liquids Test)" as described in "Test Methods for Evaluating Solid Waste, Physical/ Chemical Methods," EPA Publication SW-846 or by process knowledge.
- F-3 The Permittee shall not place containers holding free liquids in the landfill unless: [40 CFR §264.314(d)]
- All free-standing liquid: (i) has been removed by decanting, or other methods, (ii) has been mixed with absorbent or solidified so that free-standing liquid is no longer observed, or (iii) has been otherwise eliminated; or
 - The container is no larger than an ampule; or
 - The container is designed to hold free liquids for use other than storage such as a battery or capacitor.

VI-G REQUIREMENTS FOR CONTAINERS

The Permittee shall not dispose of any containers that are larger than ampules in the landfill unless they are at least 90 percent full when placed in landfill; or they are crushed, shredded, or similarly reduced in volume to the maximum practical extent before placement in the landfill [40 CFR §264.315].

VI-H CLOSURE AND POST CLOSURE CARE

- H-1 The Permittee shall close the landfill in accordance with the Closure Plan of Attachment 5 [40 CFR §264.310(a)].
- H-2 Following unit closure, the Permittee shall provide post-closure care and monitor the unit in accordance with the post-closure care plan, Attachment 5 [40 CFR §264.310(b)].
- H-3 This post-closure care shall consist of:
- Maintaining the integrity and effectiveness of the final cover, including making repairs to the cap as necessary to correct the effects of settling, subsidence, erosion, or other events;
 - Continuing to operate the leachate collection and removal system until leachate is no longer detected;
 - Maintaining and monitoring the leak detection system; [40 CFR §264.301(a)(2)]
 - Maintaining and monitoring the groundwater monitoring system;
 - Preventing run-on and run-off from eroding or otherwise damaging the final cover; and
 - Protecting and maintaining surveyed benchmarks used in complying with VI-E of this permit.

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MODULE VII TREATMENT IN INCINERATOR

VII-A PERMIT

This permit allows treatment of hazardous waste by incineration. In accordance with Section 8(a) of the Act, those aspects of treatment relating to air emissions are regulated in the DEP, Division of Air Quality (DAQ) permit issued under Section 6(a) (13) of the Act. The DAQ permit shall be in addition to this permit.

Those operational aspects of the rotary kiln incinerator relating to waste feed cut-off system sharing joint agency regulatory responsibility between the DAQ and the DWWM (inspection, testing, and record keeping requirements) are covered in Module IV, Tank Systems.

This permit will provide sole regulatory coverage for unit closure (40 CFR 264, Subpart G) along with liability and financial assurance requirements (40 CFR 264, Subpart H) for the rotary kiln incinerator in Module II, General Facility Conditions.

VII-B CLOSURE

At closure, the Permittee shall remove all hazardous waste and hazardous waste residues (including, but not limited to, ash, scrubber waters, and scrubber sludges) from the incinerator site in accordance with the procedures of the approved closure plan, Attachment 5 (40 CFR 264.351).

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MODULE VIII POST-CLOSURE CARE

VIII-A UNIT IDENTIFICATION

The Permittee shall provide post-closure care for the following hazardous waste management units, subject to the terms and conditions of this permit, and as described as follows:

A-1 Copper Pond

This surface impoundment, located in the chemical manufacturing portion of facility (EP Area), had operated and closed under RCRA interim status. The clay lined, 124,000-gallon impoundment, constructed in 1974 was used in treating a characteristic waste, EPA Hazardous Waste Number D002. The waste contained approximately 97% water, 2% total silicone (elemental silicone and silicone polymers), and the remaining 1%, a combination of elemental and soluble copper and hydrochloric acid having a pH less than 2.0. Treatment consisted of settling the copper/silicon sludge from the acidic wastewater, weekly sludge removal with subsequent on-site sludge disposal in either No. 1 or No. 2 landfill, depending on date of operation.

The manufacturing process generating this acidic copper/silicon sludge has been discontinued and this waste is no longer generated at the Sistersville Plant.

Groundwater monitoring data from the EP area of facility indicated that the surface impoundment had leaked. The state permit issued in 1988 required corrective action for the leakage but did not set a deadline for implementation. In 1991, the Permittee commenced pumping groundwater contaminated with acid, copper and other hazardous constituents, which originated from this interim status unit.

A-2 No. 1 Landfill/Impoundment

This disposal unit, located on the hillside portion of facility in a hollow off of Sugar camp Run, had operated under RCRA interim status as a landfill having 21-acre feet disposal capacity. Unit closure was accomplished under the permit.

The unit was constructed with a surface area of approximately 3.5 acres and an ultimate disposal capacity of about 91 acre-feet. Because of the nature of design and operation of the unit, waste disposal was not segregated into cells. The depth of waste at the dike is about seventy-five (75) feet. The sides of the unit consisted of native soil. The bottom consisted of native clay soil, one (1) foot of sand drainage layer covered by three (3) feet of compacted clay. The interior side of dike has a five (5) feet thick sand filter over an impervious core. The sand filter within the dike and the one-foot thick bottom drainage layer are connected to a manhole outside the dike by separate drain lines. The combined leachate then flows by gravity into wastewater treatment plant.

The unit began accepting waste in January 1972. Most of the wastes included pumpable and non-pumpable wastewater treatment sludges with lesser amounts of drums containing miscellaneous wastes including reject product, reject raw materials, and production wastes. This application showed F, U, and D009 listed wastes.

In 1982, the Permittee began decanting and adding solid materials to absorb free liquids in order to prepare the unit for closure. The Permittee installed a closure cap in 1990 consisting of the following:

- a. Foundation layer – compacted soil of varying thickness.
- b. Gas venting layer – six inches of sand.
- c. Hydraulic barrier – three feet compacted soil with maximum permeability of 1×10^{-7} cm/sec.

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- d. Sand drainage layer – one foot of sand.
- e. Vegetative layer – two feet of loose soil over a filter fabric.

This cap installed at 3-5% slope soon developed low spots (standing water) due to waste settlement that exceeded the two feet which was expected in design.

In July 1994, permit was modified to allow remediation of the cap as per option # 3 of the submitted plan (regarding the surface with borrowed soil to re-establish surface drainage).

A-3 No. 2 Landfill/Impoundment

This operating unit increased the capacity of the landfill by approximately 12% to its current 623,000 cubic yards capacity identified in Permit Condition VI-A has approximately 12 years remaining disposal capacity as projected during the year 2015. Following a permit modification in accordance with VIII-E, the conditions of this post-closure care module shall become applicable to the unit if unit closure occurs during the term of this permit.

A-4 Surface Impoundments, Tanks, and Container Storage Areas

The surface impoundments, tanks, and container storage areas defined in this permit are expected to remain in operation for the duration of this permit. In the event that closure of any of these units is necessary, the Permittee will provide a clean closure within 60 days of closure negating the need for post-closure planning.

VIII-B POST-CLOSURE CARE AND USE OF PROPERTY

- B-1 The permittee shall conduct post-closure care for each hazardous waste management unit listed in permit condition VII-A above, and any other identified in this permit following unit closure if the permittee is unable to demonstrate clean closure of that unit.

Post-closure care shall begin after completion of unit closure and continue for thirty (30) years after that date, except that the period may be shortened upon application and demonstration approved by the Director DWWM that the facility is secure, or may be extended if the Director finds this is necessary to protect human health and the environment [40 CFR 264.117(a)].

- B-2 The Permittee shall maintain and monitor the groundwater monitoring system and comply with all other applicable requirements and 40 CFR 264 Subpart F during the post-closure care period [40 CFR 264.117(a)(1)].

- B-3 The Permittee shall comply with the post-closure requirements for landfills, as follows [40 CFR 264.310(b)]:

- a. Maintain the integrity and effectiveness of the final cover, including making repairs to the cap, as necessary, to correct the effect of settling, subsidence, erosion, or other events;
- b. Continue to operate the leachate collection and removal system until leachate is no longer detected;
- c. Prevent run-on and run-off from eroding or otherwise damaging the final cover;
- d. Protect and maintain surveyed benchmarks used in complying with 40 CFR 264.309;
- e. The Permittee shall not allow any use of the units designated in permit condition VIII-A which will disturb the integrity of the final cover liners, any component of the containment system, or the functioning of the facility's monitoring systems during the post-closure care period [40 CFR 264.117(c)]; and

Note: The Director may allow a variance to this condition if a disturbance is necessary to the proposed use of the property and will not increase the potential hazard to human health or the

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environment, or is necessary to reduce a threat to human health or the environment.

The Permittee shall implement the Post-Closure Plan, Attachment 5. All post-closure care activities must be conducted in accordance with the provisions of the Post-Closure Plan [40 CFR 264.117(d)].

VIII-C INSPECTIONS

The Permittee shall inspect the components, structures, and equipment at the site in accordance with the inspection schedule, Attachment 2. [40 CFR 264.15]

VIII-D NOTICES, CERTIFICATIONS AND DISCLOSURES

- D-1 No later than sixty (60) days after certification of closure of each hazardous waste disposal unit, the Permittee shall submit to the local zoning authority, or the authority with jurisdiction over local land use, and to the Director a record of the type, location, and quantity of hazardous wastes disposed of within each cell or other disposal unit of the facility. For wastes disposed of before January 12, 1981, the Permittee shall identify the type, location, and quantity of wastes to the best of his knowledge and in accordance with any records he has kept. [40 CFR 264.119(a)]
- D-2 The following items were completed within sixty (60) days of certification of closure of the first hazardous waste disposal unit, Landfill #1, and will also be completed within sixty (60) days of the last hazardous waste disposal unit.
- a. In accordance with West Virginia Law (Section 21 of the Act), record a disclosure statement on the deed to the Facility property or on some other instrument that is normally examined during the title search; that will in perpetuity notify any potential purchaser of the property that:
- (i) The land has been used to manage hazardous wastes;
 - (ii) Its use is restricted under 40 CFR, Part 264, subpart G regulations; and
 - (iii) The survey plat and record of the type, location, and quantity of hazardous wastes disposed of within each cell or other hazardous waste disposal unit of the facility have been filed with the Director and the Tyler County zoning authority or the authority with jurisdiction over local land use.
- b. Submit a certification to the Director, signed by the Permittee, that he has recorded the notation specified in permit condition IX-D-2 (a), including a copy of the document in which the notation has been placed. [40 CFR 264.119(b)]
- D-3 If the Permittee or any subsequent owner or operator of the land upon which the hazardous waste disposal unit is located, wishes to remove hazardous wastes and hazardous wastes residues, the liner, if any, or contaminated soils, then he shall request a modification to this permit in accordance with the Permit Condition VIII-F.

The Permittee or any subsequent owner or operator of the land shall demonstrate that the removal will satisfy the criteria of 40 CFR 264.117(c) and Permit Condition VIII-B-3(e). [40 CFR 264.119(c)]

- D-4 No later than sixty (60) days after completion of the established post-closure care period for each hazardous waste disposal unit, the Permittee shall submit to the Director, by registered mail, a certification that the post-closure care for the hazardous waste disposal unit was performed in accordance with the approved Post-Closure Plan. The certification must be signed by the Permittee and an independent, registered professional engineer. Documentation supporting the engineer's certification must be furnished to the Director before the Permittee is released from the financial assurance requirements for post-closure care under 40 CFR 264.145(i) [40 CFR 264.120]

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VIII-E FINANCIAL ASSURANCE

- E-1 The permittee shall maintain financial assurance for post-closure care and comply with all applicable requirements of 40 CFR 264, subpart H. For new units, the financial assurance shall be established sixty (60) days prior to the unit receiving hazardous waste. [40 CFR 264.145]
- E-2 In order for the Director to approve a release of funds from the trust, the Permittee must demonstrate that the value of the post-closure trust fund exceeds the remaining cost of post-closure care. [40 CFR 264.145(a) (10)]
- E-3 The Permittee (or any other person authorized to conduct post-closure care) shall submit itemized bills to the Director when requesting reimbursement for post-closure care. [40 CFR 264.145(a) (11)]

VIII-F POST-CLOSURE PERMIT MODIFICATIONS

The Permittee shall request a permit modification to authorize a change in the approved Post-Closure Plan. This request must be in accordance with the applicable requirements of 40 CFR 270, and must include a copy of the proposed amended plan for approval by the Director.

The Permittee shall request a permit modification whenever changes in operating plans or facility design affect the approved Post-Closure Plan, there is a change in the expected year of final closure, or other events occur during the active life of the facility that affect the approved plan. The Permittee must submit a written request for a permit modification at least sixty (60) days prior to the proposed change in facility design or operation, or no later than sixty (60) days after an unexpected event, which has affected the Post-Closure Plan.

If the Permittee or Director determine that the permitted surface impoundments must be closed as a landfill, subject to the requirements of 40 CFR 264.310, the Permittee shall no later than ninety (90) days after the determination submit a post-closure plan for the impoundments. [40 CFR 264.118(d)(3)]

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MODULE IX GROUNDWATER MONITORING

IX-A WELL LOCATION AND CONSTRUCTION

The facility will continue to implement a detection monitoring program in accordance with Module IX.

A-1. EP Area

The Permittee must monitor wells 10, 11A, 12A, 13 A, 14, 20, 21, and 3203 at the EP area. Wells L-1, L-2 and L-3 will also be monitored only for the presence of LNAPL. Well locations are specified on the map in Attachment 10.

A-2. No. 1 Landfill

The Permittee must monitor wells M-31R, 33, 34, 35, 44, 45, and S at No. 1 Landfill to implement the Post-Closure Care plan for the closed landfill No. 1. Well locations are specified on the map in Attachment 10.

A-3. No. 2 Landfill

The Permittee must monitor wells 106-1, 100-A, 37, 38, 39, 40, 41, and 43 at the No. 2 Landfill. Wells L-4, L-5, L-6, L-7, L-8, and L-9 will also be monitored for the presence of LNAPL only. Well locations are specified on the map in Attachment 10.

A-4. The background monitoring wells are the following locations:

- Wells 10 (EP Area)
- M-31R (No. 1 Landfill)
- 106-1 (No. 2 Landfill)

A-5. The wells in Permit Conditions IX-A-1 through IX-A-3 have been constructed in accordance with West Virginia requirements for monitoring wells. The Permittee shall maintain these wells to function as designed.

IX-B SAMPLING AND ANALYSIS PROCEDURES

The Permittee shall use the following procedures and techniques when obtaining samples and analyzing samples from the groundwater monitoring wells described in Permit Condition IX-A. In addition, the permittee must comply with the following requirements for any groundwater-monitoring program developed to satisfy 40 CFR 264.97, 264.98, 264.99, and 264.100.

1. Samples shall be collected by the techniques described in the Sampling and Analysis Plan, Attachment 11.
2. Samples shall be preserved and shipped (when shipped off-site for analysis) in accordance with the procedures specified Attachment 11.
3. Samples shall be analyzed according to the procedures specified in Attachment 11.
4. Samples shall be tracked and controlled using the chain of custody procedures specified in Attachment 11.

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IX-C GROUNDWATER ELEVATION

The Permittee shall determine the groundwater surface elevation in wells to be sampled each time groundwater is sampled in accordance with Permit Condition IX-F.

IX-D GROUNDWATER QUALITY AND MONITORING PARAMETERS

- D-1. The Permittee shall monitor the groundwater monitoring wells listed in Permit Condition IX-A-1 and IX-A-2 for the parameters (monitoring parameters and hazardous constituents) specified in Table-VIII-1 semiannually.

TABLE IX-1
PARAMETERS FOR GROUNDWATER MONITORING

Acrylonitrile
Chlorobenzene
Chloromethane (Methylchloride)
Toluene
pH

- D-2. The Permittee shall monitor the groundwater monitoring wells listed in Permit Condition IX-A-3 for the parameters (monitoring parameters and hazardous constituents) specified in Table-IX-2 semiannually.

TABLE IX-2
PARAMETERS FOR GROUNDWATER MONITORING

Toluene
Ethylbenzene
Xylenes
Acrylonitrile
Chlorobenzene
Chloromethane (Methylchloride)

- D-3. Groundwater monitoring requirements are summarized in the Table IX-3

RCRA DETECTION MONITORING UNITS					
EP Area		#1 Landfill Area		#2 Landfill Area	
Semi-Annual Sampling		Semi-Annual Sampling		Semi-Annual Sampling	
10	Acrylonitrile	M-31-	Acrylonitrile	106	Toluene
	Chlorobenzene	R	Chlorobenzene		Ethylbenzene
11A	Chloromethane	33	Chloromethane	100-	Xylenes
	Toluene		Toluene	A	Acrylonitrile
12A	pH	34	pH	37	Chlorobenzene
13A		35		38	Chloromethane
14		44		39	
20		45		40	
21		S		41	
3203				43	
L-1	LNAPL only			L-4	LNAPL only
L-2				L-5	
L-3				L-6	
				L-7	
				L-8	

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				L-9			
CORRECTIVE ACTION MONITORING UNITS							
North Inactive Site Annual Sampling		South Inactive Site Semi-Annual Sampling		No. 3 Sludge Pond and BTEX Area Semi-Annual Sampling		Copper Pond Area Semi-Annual Sampling	
NF-1	Chlorobenzene	2701-R	Benzene	20	Benzene	23	pH only
	Benzene		Acrylonitrile		Chlorobenzene		
NF-2	Toluene	5701	Chlorobenzene	3203	Cis-1,2-	27	Contingent
NF-3A	1,1-Dichloroethane	5702	Methyl Chloride		Dichlorobenzene	53	Analytes:
NF-4	Cis-1,2-Dichloroethane	5703	Toluene		Trans-1,2-		Acrylonitrile
NF-5A	Dichloroethylene	5704	Ethylbenzene		Dichloroethylene	55	Chlorobenzene
NF-6	Trans-1,2-Dichloroethylene	5705	Xylenes		(in addition to those in the EP Area list)		Chloromethane
NF-7			1,1-Dichloroethane				Toluene
NF-8			1,2-Dichloroethane				
NF-9			1,1,1-Trichloroethane				
			Cis-1,2-Dichloroethylene				
			Trans-1,2-Dichloroethylene				
			Dichloroethylene				

D-4. The parameters listed in Tables IX-1 and IX-2 are subject to statistical significant increase test per monitoring period. For pH parameter, a statistically significant increase will be deemed to have occurred if the sampling result is outside the range of 5.0 – 8.5 s.u.

IX-E POINT OF COMPLIANCE

The points of compliance at which the WVDEP DWWM Office of Water Resources (OWR) Groundwater Protection Rule in 47 CSR 58 apply are specified in Permit Condition IX-A-1 thru IX-A-3.

IX-f. MONITORING PROGRAM AND DATA EVALUATION

The Permittee shall determine groundwater quality as follows:

1. The Permittee shall collect, preserve, and analyze samples pursuant to Permit Condition IX-B.
2. The Permittee shall determine groundwater quality (i.e., the parameters specified in Permit Condition IX-D) throughout the active life of the facility (including the closure and post-closure care periods). These determinations shall be made as follows:
3. The Permittee shall determine the groundwater flow rate and direction in the uppermost aquifer at least annually. Water level data will be collected annually from the below listed wells to establish the flow rate and direction within the uppermost aquifer.

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10	3204	4316
11A	M-31R	4317
12A	33	4401
13A	34	4403
4210	35	51
4211	44	52
4212	45	54
4213	R	56
4214	S	27
4215	D	53
42P1	63	55
14	4501	NF-2
20	5301	NF-3A
21	5302	NF-4
3203	5502	NF-5A
2404	61	NF-6
4315	62	NF-7
71	64	NF-8
72	23	NF-9
73	22	106-1
74	24	100-A
2502	25	37
2503	26	38
3101	28	39
	3301	40

4. The Permittee shall obtain samples from background wells each time downgradient wells are sampled.
5. The Permittee shall compare downgradient concentrations of the parameters in Section IX-D-1 through D-3 to the background concentrations to determine whether the background concentrations have been exceeded. In determining whether the background concentrations have been exceeded, the Permittee shall use the procedures specified in Permit Condition IX-G.
6. The Permittee shall perform the evaluations described in Permit Condition IX-F-5 within sixty (60) days after completion of sampling. The Permittee may elect to resample. If the Permittee elects to resample, the Permittee shall perform the evaluations of these data within sixty (60) days of completion of the resampling.
7. Whenever hazardous constituents are detected at the compliance point, the permittee or operator must institute a compliance-monitoring program under §264.99. Detected is defined as statistically significant evidence of contamination as described in §264.98(f).
8. Whenever the groundwater protection standard is exceeded, the permittee or operator must institute a corrective action program under §264.100. Exceeded is defined as statistically significant evidence of increased contamination as described in §264.99(f).
9. Whenever hazardous constituents exceed concentration limits in groundwater between the compliance point and the down gradient facility property boundary, the owner or operator must institute a corrective action program under §264.100; or, in all other cases, the owner or operator must institute a detection-monitoring program under §264.98.

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10. The permittee or operator must comply with conditions specified in the permit that are designed to ensure that hazardous constituents detected in the groundwater do not exceed the concentration limits in the uppermost aquifer underlying the waste management area beyond the point of compliance under §264.95 during the compliance period. The DWWM will establish the groundwater protection standard in the facility permit when hazardous constituents have been detected in the groundwater.
11. If Compliance Monitoring is required, Pursuant to 40 CFR §264.99(g), the permittee must analyze samples from all monitoring wells at the compliance point for all constituents contained in Appendix IX of Part 264, at least once in three years (33 CSR 20-7.5, C, 1), to determine whether additional hazardous constituents are present in the uppermost aquifer and, if so, what concentration.

If the permittee finds constituents in the groundwater that are not already identified, the permittee must comply with the requirements of 40 CFR §264.99(g) for reporting and inclusion in the monitoring list.

As defined above compliance monitoring is triggered by:

1. Hazardous constituents are detected at the compliance point;
2. Whenever the groundwater protection standard is exceeded; or
3. Whenever hazardous constituents exceed concentration limits in groundwater between the compliance point and the down gradient facility property boundary

IX-G COMPARISON PROCEDURES

When evaluating the monitoring results pursuant to Permit Condition IX-F, the Permittee shall use the following procedures.

1. When comparing the concentrations of the monitoring parameters in Table IX-1 and/or Table IX-2 in accordance with Permit Condition IX-F-5, the Permittee shall use the current and historical data and use a statistical procedure consistent with USEPA guidance. One sample will be collected per well.
2. Chlorobenzene, 1,2-(cis)-Dichloroethene, and 1,1-Dichloroethane have been previously detected in the EP and the North Inactive Areas in monitoring wells that are in the path of migration from the North Inactive Site to the groundwater recovery well. The detection of these compounds indicates that the groundwater recovery well is operating correctly, therefore future detections of these compounds will not trigger the Appendix IX Sampling described in Section IX-H-2.

IX-H REPORTING, RECORDKEEPING AND RESPONSE

H-1.

- a. The Permittee shall enter all monitoring, testing, and analytical data obtained pursuant to Permit Condition IX-F in the operating record, as required by 40 CFR 264.97(j).
- b. The Permittee shall submit all groundwater monitoring data required by Permit Condition IX-H-1. a. in an annual report to be submitted to the Director by March 31 each year.

H-2.

If the permittee determines, pursuant to Permit Condition IX-G, that there is a statistically significant increase above the background values for the parameters specified in Condition IX-D-1 and D-2, the Permittee shall:

- a. Notify the Chief in writing within seven (7) days, as required 40 CFR 264.98(g)(1)
- b. Immediately sample the groundwater in all wells in the area of concern, monitoring the affected Point of Compliance and determine the concentration of all constituents, except dioxins and

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furans, identified in Appendix IX of 40 CFR 264.

- c. For any Appendix IX compound found in the analysis pursuant to Permit Condition H-2.b, the Permittee may resample within one month and repeat the analysis for those compounds detected.
 - d. Establish background values for each Appendix IX constituent found in the groundwater.
 - e. Submit to the Director within ninety (90) days, a written report including the information required in 40 CFR 264.98(g)(4).
- H-3. If the Permittee determines, pursuant to Permit Condition IX-F-5 that there is a statistically significant increase in the concentration of hazardous constituents specified pursuant to Permit Condition IX-D-1 and D-2 at any monitoring well at the Point of Compliance thereby violating 47 CSR 58, the Permittee must comply with the provisions of the contingent corrective action program specified in Attachment 12 unless the Chief determines that a demonstration made under Permit Condition IX-H-5 successfully shows that a source other than the regulated unit caused the increase or that the increase resulted from an error in sampling, analysis, or evaluation.
- H-4. If the Permittee is in a Corrective Action Program, the analytical requirements of Permit Conditions IX-F, IX-G, and IX-H shall no longer apply. The Permittee shall submit, as part of the Corrective Action Plan, a revised analytical program.
- H-5. If the Permittee determines, pursuant to Permit Condition IX-F-5 that groundwater standards pursuant to 47 CSR 58 are being exceeded on any monitoring well at the point of compliance, the Permittee may demonstrate that a source other than a regulated unit caused the increase or that the increase resulted from error in sampling, analysis or evaluation. In making a demonstration under this paragraph, the Permittee must address 40 CFR 264.98(6).

IX-I PERMIT MODIFICATION

If the Permittee determines that the groundwater monitoring program no longer satisfies the requirements of Part IX of the permit and 40 CFR 264.98, the Permittee shall, within ninety (90) days, submit an application for a permit modification to make any appropriate changes to the program.

IX-J CORRECTIVE ACTION

If the Groundwater Protection Standards pursuant to 47 CSR 58 are exceeded as described in Permit Condition IX-G and IX-H, the Permittee shall implement the contingent corrective action plan in Attachment 12 within ninety (90) days of confirmation of the statistical increase.

IX-K GENERAL REQUIREMENT

The Permittee must assure that monitoring and corrective action measures necessary to achieve compliance with 47 CSR 58 are taken during the term of this Permit.

MODULE X CORRECTIVE ACTION

The RCRA Corrective Action Program (CAP) requires investigation and cleanup of releases of hazardous constituents and hazardous waste that pose an unacceptable threat at current and former RCRA hazardous waste treatment, storage, and disposal (TSD) facilities. The objectives of the RCRA CAP is to evaluate the nature and extent of the releases of hazardous waste constituents; to evaluate facility characteristics; and to identify, develop, and implement and appropriate corrective measure or measures to protect human health and environment.

X-A GENERAL CORRECTIVE ACTION REQUIREMENTS (40 CFR 264.100)

The Permittee is required to establish a corrective program under this subpart must, at a minimum, discharge the following responsibilities:

- A-1 Ensure that regulated unit complies with the ground-water protection standard.
- A-2 Implement a corrective action program that prevents hazardous constituents from exceeding their respective concentration limits at the compliance point by removing the hazardous waste constituents or treating them in place.
- A-3 Begin corrective action within a reasonable time-period after the groundwater protection standard is exceeded.
- A-4 Implement a groundwater monitoring program to demonstrate the effectiveness of the corrective action program.
- A-5 Conduct a corrective action program to remove or treat in place any hazardous constituents that exceed concentration limits in groundwater:
- A-6 The Permittee is not relieved of all responsibility to clean up a release that has migrated beyond the facility boundary where off-site access is denied.
- A-7 Corrective action measures under this paragraph may be terminated once the concentration of hazardous constituents is reduced to levels below their respective concentration limits.
- A-8 Ensure that the groundwater protection standard is not exceeded.
- A-9 Continue the corrective action for a long as necessary to achieve compliance with the groundwater protection standard.

X-B COMPONENTS OF CORRECTIVE ACTION PROGRAM

- B-1 The following components are necessary to ensure a complete corrective action program and the detail in each of these steps will vary depending on the facility and its complexity.
 - a. Locate the source of contamination.
 - b. Determine the extent of contamination.

- c. Determine actual and potential threats from the contamination to human health and the environment in both the short and long term.
- d. Implement stabilization measures to control the source of contamination.
- e. Evaluate the overall integrity of containment structures intended for long-term containment.
- f. Monitor the performance of any interim or final corrective measure(s) to ensure that human health and the environment are being protected.

X-C. RCRA CORRECTIVE ACTION PERMIT

- C-1 In December 1990, EPA issued a RCRA corrective action permit (RCRA CAP) to the Permittee to conduct site cleanup. In 1997, the RCRA CAP was modified to incorporate interim measures to address areas of contamination. The following requirements of the RCRA CAP have been completed:
- a. A RCRA Facility Investigation (RFI) of the North Inactive Site was conducted between January and June 1992 to determine if any areas warranted cleanup action.
 - b. A Verification Investigation (VI) for the South Inactive Site, Waste Water Treatment System, Drum Staging Area, #3 Sludge Pond, and BTEX Area.
 - c. Based on the recommendations in the VI, an RFI of the South Inactive Site, Waste Water Treatment System, #3 Sludge Pond, and the BTEX Area conducted in 1994
 - d. Interim measures were implemented at various Solid Waste Management Units (SWMUs).

X-D INTERIM MEASURES

- D-1 All interim measures were completed after discussions with and approval from EPA.
- a. North Inactive Site
 - i. Interim measures implemented during the summer and fall of 1992 consisted of construction to improve run-on/run-off control and minimize surface water infiltration.
 - ii. Ongoing periodic inspections.
 - iii. Construction of a 10-acre earthen cap with a minimum of 18 inches of compacted soil fill material sloped at 2% to 5%.
 - iv. A V-shaped diversion ditch lined with 18 inches of grouted riprap in potential high erosion areas was constructed along the east side of the North Inactive Site to intercept surface water from the wooded hillside on the east and divert it away from the disposal area.
 - v. Approximately 400 feet of Sugar Camp Run was upgraded to stabilize the bank and prevent erosion along the edge of the North Inactive Site. The upgrade consisted of widening and grading the section to form a uniform trapezoidal channel that was lined with 18 inches of grouted riprap.
 - vi. New fencing was placed along the east, southeast, and northeast sections of the North Inactive Site.

- vii. Semiannual inspections of the earthen cap, ditches, fencing, and the Sugar camp Run stabilized banks to identify maintenance needs.
 - viii. Semiannual groundwater monitoring of the area around the North Inactive Site.
 - ix. A groundwater recovery well was installed in the center of the production area in June 1991 to remediate groundwater impacted by the management of acidic wastes on-site. In December 1991, the well began operation, pumping at 90 to 100 gallons per minute (gpm). The recovered water is sent to the WWTS's dewatering unit for use as spray water in the belt filter press.
 - x. The results of a 1994 hydrogeologic study at the Facility indicated that the existing recovery well is adequate to intercept contaminants from the North Inactive Site and protect off-site receptors.
- b. South Inactive Waste Site
- i. Quarterly groundwater sampling of the five monitoring wells installed during the RFI was implemented pursuant to the 1997 CAP Modification. In addition, the earthen cover is inspected during monitoring events to identify potential erosion areas and maintenance needs.
- c. WWTS
- i. The two surface impoundments, although currently active, were identified as SWMUs because of suspected leakage through the primary liner. Therefore, daily monitoring of the leakage rate of the surface impoundments to determine if the monthly rate exceeded certain leakage rates was included in the CAP. Even though it was later determined that the suspected leakage was actually rainwater infiltration, this requirement of the CAP was not modified and monitoring continues.
 - ii. The UNOX™ Reactors are inspected every two years, the primary clarifiers are inspected annually, and the terminal manhole/neutralization pit and portions of the main process sewer are inspected every two or three years during plant wide electrical shutdown.

X-E SCOPE OF CORRECTIVE ACTION

- E-1 Data for the Drum Storage Areas, Copper Shanty, and the sediments to Sugar Creek Run supports that no further investigation and/or remediation is warranted. Any constituents present were below action levels or appear to be naturally occurring.
- E-2 The SWMUs covered by this corrective action are the North Inactive Site, South Inactive Site, Waste Water Treatment System, and the BTEX Area.

X-F PROPOSED CORRECTIVE MEASURES

- F-1 The proposed correction action is to continue the operation of the current groundwater recovery system at the facility.
- F-2 In addition, inspections and groundwater monitoring will continue on a routine schedule.

X-G FINAL REMEDY

- G-1 The Final Decision was issued by the United States Environmental Protection Agency (EPA) under the authority of the Solid Waste Disposal Act as amended by the Resource Conservation and

Recovery Act of 1976 (RCRA) and the Hazardous and Solid Waste Amendments of 1984 (HSWA), 42 U.S.C. § 6901 et seq., and EPA regulations at 40 C.F.R. Parts 260-271 and Part 124.

G-2 Consistent with EPA's February 2003 document Final Guidance on Completion of Corrective Action Activities at RCRA Facilities (reference 68 FR 8757), EPA is making a determination of "Corrective Action Complete with Controls" for the MPM Silicones, LLC site. The guidance recommends that EPA make this determination where the full set of corrective measures has been implemented and all that remains is performance of required operation and maintenance and monitoring actions, and/or compliance with and maintenance of any institutional controls. The final remedy for the MPM Silicones site meets these objectives and is protective of human health and the environment.

G-3 The final remedy for the MPM Silicones site is as follows:

a. Site Wide

- i. The surface water, sediments, and soils were addressed during past environmental investigations conducted at the Facility. These media were remediated as necessary through interim measures. As a result, no further action is proposed for surface water, sediment, and soil.
- ii. Institutional controls are to be implemented at the entire Facility to prohibit the use of groundwater as a potable source, to protect the integrity of the remedy, and to prevent exposure to contaminants that are still present at the Facility. These institutional controls will remain in place until EPA or WVDEP has determined that the groundwater has been remediated to drinking water standards.

b. North Inactive Site

- i. An earthen cap and a surface water diversion ditch were constructed to limit the amount of surface water runoff to Sugar Camp Run and to minimize transport of contaminants to groundwater. Institutional controls are to be implemented at the NORTH INACTIVE SITE to prevent disturbance of the earthen cap, to protect the integrity of the remedy, and to prevent exposure to contaminants that are still present at the Facility. These institutional controls will remain in place in perpetuity, and may include title notices and land use restrictions through easements and covenants.
- ii. Additionally, continued inspection of the NORTH INACTIVE SITE is proposed on the schedule provided below. Deficiencies will be corrected in a timely manner, depending on the nature of the problem. However, in no case will the correction take more than thirty days. If more than thirty days is needed, the Facility will contact WVDEP and outline a plan of action.

Inspection Schedule

Earthen Cover	Semiannually and after a heavy rainfall
Diversion Ditches	Semiannually and after a heavy rainfall
Sugar camp Run Banks	Semiannually and after a heavy rainfall
Monitoring Wells	Each sampling event
Brush and Weed Control	Mow annually
Reseeding	As needed

- iii. A heavy rainfall is defined as 3" or more of rain accumulation in a 24-hour period.

- iv. The monitoring wells NF-1 to NF-9 have historically been sampled semiannually. Based upon historical data, sampling frequency is reduced to annual only. If any analyte is detected at concentrations greater than its respective MCL, the sampling frequency will revert to semiannually.

1. The proposed analyte list is as follows:

- Chlorobenzene
- Benzene
- Toluene
- 1,1-Dichloroethane
- Dichloroethylene (cis-1,2)
- Dichloroethylene (trans-1,2)

c. South Inactive Waste Site

- i. Continue monitoring the groundwater and the ground cover.

- ii. The monitoring wells installed during the RFI (5701, 5702, 5703, 5704, and 5705) were initially sampled quarterly, but sampling frequency has been reduced to semi-annual based upon sample results.

1. The proposed analyte list is as follows:

- Benzene
- Acrylonitrile
- Chlorobenzene
- Methyl Chloride
- Toluene
- Ethylbenzene
- Xylenes
- 1,1-Dichloroethane
- 1,2-Dichloroethane
- 1,1,1-Trichloroethane
- Dichloroethylene (cis-1,2)
- Dichloroethylene (trans-1,2)

- iii. MW-2701-R will be added to the groundwater-sampling program for the SIS to monitor migration toward the Ohio River. If any of the above compounds is detected in MW-2701-R above its respective MCL, MW-2701-R will be resampled within 30 days. If any of the above constituents is still present in MW-2701-R above its respective MCL, WVDEP will be notified within seven (7) days. The Ranney Wells No.3 and No.4 will capture the migrating groundwater to send it back to the process.

- iv. If the Ranney Wells are permanently taken out of service, the Facility will notify WVDEP of the action no less than seven (7) days prior to shut down and will submit to WVDEP, within 30 days of the shutdown, a plan that addresses the development of an alternative source control technique. Upon approval by WVDEP, the Facility will implement the alternative source control plan.

- v. The cover over the existing disposal areas will be inspected on the same frequency as the groundwater sampling. Inspection will include checking for erosion damage and ponding. The location and severity of any noted erosion, along with the corrective action to be taken to address the erosion, will be recorded on an inspection form. Implementation of corrective actions will begin within 30 days of the inspection that documents erosion or ponding on the

cover. Each case of erosion or ponding will be evaluated on an individual basis as to urgency and type of repair needed.

d. Waste Water Treatment System

- i. The surveys and inspections of the main trunk of the process sewer and the concrete tanks have not identified major breaches or releases to date. Continuation of the current inspection frequency is proposed to ensure the WWTS remains structurally sound. Any deficiencies found will be repaired in a timely manner based on the severity of the problem, but will in no case exceed thirty days. If more than thirty days will be required to correct a problem, WVDEP will be notified as to the nature of the problem and the estimated time needed for repair.

Inspection Schedule

UNOX Reactors	One reactor per year, alternating
Primary Clarifiers	One clarifier per year, alternating
Terminal Manhole/ Neutralization Pit	During plant wide, electrical shutdown
Process Sewer	During plant wide, electrical shutdown in rotating 1000' sections

- ii. In addition, the leak rate of the two surface impoundments will be monitored for the life of the unit per the following program. The CAP currently defines an action leakage rate at 20 gallons per day (gpd) and a rapid and extremely large leakage rate at 2,500 gpd. When the average daily leakage rate is equal to or greater than 20 gpd but less than 2,500 gpd to either of two leak collection sumps, the CAP requires that the Facility meet certain requirements, including, but not limited to, notifying EPA and the State, sampling, performing quality determination, and, if necessary, submitting a Response Action Plan for EPA's approval. These actions are also required when the average daily leakage rate is equal to or greater than 2,500 gpd; in these cases, the Response Action Plan is always required under the terms of the CAP, and EPA may require that the Facility terminate the receipt of waste and empty the unit.
- iii. The average daily leakage rate requirements of the CAP will be modified to a single action leakage rate of 750 gpd for each surface impoundment. The Facility will convert the weekly flow rate from the monitoring data to an average daily flow rate for each sump. The following Facility requirements are proposed:
 1. The Facility will monitor for and record on a daily basis the presence of liquids in the leak detection system removal sump.
 2. The Facility will analyze the daily monitoring data on a weekly basis to determine if the average leakage rate over the preceding one-month period exceeds the action leakage of 750 gpd to either of the two leak collection sumps of the surface impoundments.
 3. When the average daily leakage rate is equal to or greater than 750 gpd, the Facility must:
 - a. Within seven (7) days of making the determination, notify the WVDEP that the rate was exceeded.
 - b. Immediately sample the leakage in the collection sump to determine its quality. Compare the leakage quality to health-based standards (MCLs, EPA Region III RBCs, and WVDEP Standards) and provide the results to

WVDEP within thirty (30) days.

- c. Discuss with WVDEP whether waste receipt should cease or be curtailed, whether any waste should be removed from the unit for inspection, repairs, or controls, and whether the unit should be closed. If the concentration of hazardous constituents in the leakage exceeds the health-based standards, and WVDEP determines that a threat to human health and the environment exists, WVDEP may require termination of receipt of waste and emptying the unit.
 - d. Determine with WVDEP any other short-term and longer-term actions to be taken to mitigate or stop any leaks.
 - e. Within 30 days after the notification that the action leakage rate has been exceeded, submit to WVDEP information about the leak (e.g., the location, size, and cause of the leak), the results of the above analyses, and the results of the actions taken to date. Additionally, the Facility must, at that time, submit to WVDEP for their approval, a proposal for additional actions planned.
 - f. If the action leakage rate continues to exceed 750 gpd monthly thereafter, the Facility must submit a report summarizing the results of any remedial actions taken and a proposal for actions planned to the WVDEP for approval.
 - g. Within 30 days of approval of proposed actions by WVDEP, the Facility shall initiate implementation of those actions.
- e. No. 3 Sludge Pond and BTEX Area
- v. A Corrective Measures Survey and a Comprehensive Groundwater Study were conducted in 1994. The studies confirmed that the existing groundwater recovery well installed in 1991 effectively captures groundwater from the NORTH INACTIVE SITE, the No.3 Sludge Pond, and the BTEX Area. The proposed remedy is to continue operating the recovery well and monitor groundwater contaminants through routine sampling.
 - vi. Groundwater elevation data was historically collected quarterly along with the river level. The groundwater flow direction will be evaluated yearly through collection of site groundwater elevation data to verify that contaminants from the North Inactive Site, No.3 Sludge Pond, and BTEX Area are continuing to be captured by the recovery well (4315).
 - vii. Based upon historical data collected over 20+years, MW-20 will be sampled semi-annually for benzene, chlorobenzene, cis-1,2-Dichloroethylene, and trans-1,2-Dichloroethylene. If any of these compounds is detected in MW-20 above its respective MCL, MW-20 will be resampled. If any of the above constituents is still present in MW-20 above its respective MCL, MW-3203 will be added to the semi-annual monitoring program for the same parameters as MW-20 and the pumping rate of the recovery well may be increased to extend the capture zone.
 - viii. Should any of the indicator parameters be detected in MW-3203 at levels above its respective MCL, the well will be re-sampled within 30 days. If the second sampling confirms the presence of any indicator parameter in this well above its respective MCL, WVDEP will be notified within seven (7) days. The Facility will submit to WVDEP, within 30 days of the sampling that confirms the presence of an indicator parameter above its MCL, a plan that addresses the development of an alternative source control technique. Upon approval by

WVDEP, the Facility will implement the alternative source control plan.

X-H REPORTING

H-1 The Permittee will submit to the WVDEP semi-annual corrective action updates, in letter format, detailing all corrective action activities during the reporting period.

- a. Each quarterly update must contain the following information:
1. brief introduction;
 2. description of work completed during the reporting period;
 3. summary of findings;
 4. changes made during the reporting period;
 5. problems encountered and actions taken to rectify problems;
 6. changes in personnel; and,
 7. projected work for the next reporting period,

H-2 The Permittee will submit to the WVDEP an annual corrective action report by February 28, with the reporting period ending December 31st of a given year.

- a. Each annual report must contain the following information:
1. introduction;
 2. description of all work completed during the year;
 3. analytical data from the four-quarterly ground water sampling events;
 4. summary of all changes made during the year;
 5. summary of all problems encountered during the year and actions taken to rectify problems;
 6. projected work for the next year,
- b. One copy of annual report will be to:

Mr. Kenan Cetin
Office of Environmental Remediation
WVDEP-DWWW
601 57th Street SE
Charleston, WV 25304

X-I QUALITY ASSURANCE

I-1 The Permittee shall ensure that laboratories used for analyses perform such analyses according to

the EPA methods included in "Test Methods for Evaluating Solid Waste" (SW-846, November 1986) or other methods deemed satisfactory to WVDEP. If methods other than EPA methods are to be used, the Permittee shall submit all analytical protocols to be used for analyses to the Director for approval at least thirty-calendar days prior to the commencement of analyses and shall obtain the Director's approval prior to the use of such analytical protocols.

- I-2 The Permittee shall ensure that laboratories used for analyses participate in a quality assurance/quality control program equivalent to that, which is followed by EPA. As part of such program, and upon request by the Director, such laboratories shall perform analyses of the appropriate number of samples provided by the Director to demonstrate the quality of the analytical data.
- I-3 Inform the Director at least fourteen (14) calendar days in advance regarding which laboratory will be used by the Permittee to conduct laboratory analyses and ensure that WVDEP personnel and WVDEP authorized representatives have reasonable access to the laboratories and personnel used for analyses. This notification is required only if the Permittee changes laboratories from the one in use, for which previous notification has been provided.

X-J SAMPLING AND DATA DOCUMENT AVAILABILITY

- J-1 The Permittee shall submit to the Director the results of all sampling and/or tests or other data generated by, or on behalf of, the Permittee in accordance with the requirement of the Permit.
- J-2 The Permittee shall notify the WVDEP at least fourteen (14) calendar days in advance of any field activities, including but not limited to, well drilling, installation of equipment, or sampling. At the request of WVDEP, the Permittee shall provide or allow WVDEP or its authorized representative to take split or duplicate samples of all samples collected by the Permittee pursuant to this Permit. At the request of the Permittee, WVDEP shall provide the Permittee with a portion of each sample taken equal in volume or weight to the portion retained by WVDEP. Nothing in this Permit shall limit or otherwise affect WVDEP's authority to collect samples pursuant to applicable law, including, but not limited to, RCRA and CERCLA.

X-K ACCESS

- K-1 The Permittee shall use its best efforts, as defined below, to obtain site access agreements from the present owner(s) and or lessees, as appropriate, of such property within four (4) weeks after receipt of notice of the Director's approval of any scope of work or work plan which require work on property which is not owned or controlled by the Permittee. "Best efforts" as used in this paragraph shall include at a minimum, but shall not be limited to, sending a certified letter to the present owners and/or lessees, as appropriate, of such property requesting access agreements to allow the Permittee and WVDEP and their authorized representatives to enter such property at all reasonable times.
- K-2 In the event that access agreements are not obtained, the Permittee shall immediately notify the Director in writing indicating all efforts made to obtain such agreements.

X-L CORRECTIVE ACTION COMPLETE

- L-1 At any time during the corrective action activities, the Permittee can submit documentation in support of corrective action complete in accordance with EPA's *Final Guidance on Completion of Corrective Action Activities at RCRA Facilities* (February 13, 2003).

ATTACHMENT 1 – WASTE ANALYSIS PLAN

Before the EP Department disposes of any hazardous waste, sufficient information is compiled to properly treat, store, or dispose of the waste. This information is in the form of detailed chemical and physical analysis as obtained from actual sample analysis or from published or documented data on the waste or on waste generated from a similar process. Information about the chemical and physical properties of most waste streams is summarized on internal waste description sheets or MSDS.

General waste description sheets are based on information (including engineering judgment) from the generating departments, Laboratory, and Environmental Protection Department. Data included on these sheets are the waste name, material composition, EPA hazardous waste code, characteristics, and disposal methods.

MSDSs are the combined effort of the generating department, Laboratory Department and Product Safety Department. Included in these sheets are date of issue, name and description of material, physical and chemical properties, stability and storage data, and hazard rating. This information is kept on the plant's computer network and is available plant wide. An MSDS is prepared for most wastes handled at the Sistersville Plant.

Waste characterization is repeated as necessary to ensure that the data is accurate and up to date. At a minimum, waste is re-characterized when the process or operation generating the waste has changed and the change would subsequently result in a change to the physical and/or chemical properties of the waste. Wastes received from off-site sources are reevaluated when the inspection of the waste identifies a discrepancy on the accompanying manifest that cannot be reconciled.

Parameters and Rational

The Environmental Protection Department has treated, stored, or disposed of most of the subject wastes prior to the November 19, 1980, the effective date of the RCRA law. Because of this vast experience, much reliance is placed on knowledge of personnel in the EP Department, the generating departments, laboratories, and the Technology Group to classify hazardous wastes and to treat, store, or dispose of the waste. Other references will be consulted as needed, such as the Lange Handbook of Chemistry and the Handbook of Chemistry and Physics.

The EP Department uses four methods to process wastes on site. These are neutralization/hydrolysis, biological degradation, incineration, and land disposal in the Equalization Basin, Diversion Basin, or No. 2 Landfill. Hazardous waste processed onsite is referenced as to the applicable test method, treatment, storage, and disposal method, the EPA hazardous code number, required sampling methods, rationale, and frequency of testing.

General

If major changes occur in the generating process or operation or if inspection of the hazardous waste does not match the existing compositional and characteristic data, the hazardous waste will be re-sampled and re-analyzed and new data sheets provided. All hazardous waste is fully characterized when first generated and the Environmental Protection Department is consulted to determine the appropriate disposal method and to ensure all waste management regulations are met.

Incinerator

Consistent with Condition VII-A of this permit, wastes treated in the on-site hazardous waste incinerator are analyzed in accordance with the Feedstream Analysis Plan required by the permit issued by the West Virginia Department of Environmental Protection Division of Air Quality under Section 6(a)(13) of the Act, the National Emissions Standards for Hazardous Waste Combustors (40 CFR Part 63, Subpart EEE), and the Title V Air Operating Permit issued under the West Virginia Air Pollution Control Act (West Virginia Code §§ 22-5-1 et seq.).

Offsite Wastes

When hazardous waste materials are received from off-site, the description and weight or count of the manifest is compared to the material received to be sure the material is properly identified and meets the requirements of the

RCRA regulations. Random analyses will be conducted to confirm that the waste received matches shipping information.

Equalization Basin/Diversion Basin Sump Water

The rate of leakage into these two sumps are monitored daily and this data is evaluated weekly to determine if the average leakage rate over the preceding one-month period exceeds the action leakage rate. If the leakage rate is exceeded, the sump liquid is sampled, analyzed, and compared to health-based standards. The compounds tested for are derived from Section 141.2 of the Safe Drinking Water Act (40 CFR 141 Subpart B).

The analytes selected for testing are those determined to be potentially present at the site and include the following:

- Eight (8) RCRA metals (40 CFR 261.24 Table 1)
- Volatile Organic Compounds (VOCs)
 - vinyl chloride
 - ethyl chloride
 - acrylonitrile
 - 1,1, dichloroethane
 - methylene chloride
 - 1,1 dichloroethylene
 - chloroform
 - 1,1,1 trichloroethane
 - 1,2 dichloroethane
 - benzene
 - carbon tetrachloride
 - trichloroethylene
 - toluene
 - tetrachloroethylene
 - chlorobenzene
 - ethylbenzene
 - 1,4 dichlorobenzene
 - 1,2 dichlorobenzene
 - xylenes

Test Methods

The applicable test methods required to characterize a waste stream are partially dependent on the method of disposal selected for the subject waste. Because of this, it is appropriate to list the test methods and analytical parameters for waste characterization as they apply to a specific disposal method. Table 1, *Waste Analyses, Rationale and Frequency*, lists the test methods and analytical parameters applicable to wastes destined for different waste management units. In many cases, generator knowledge of a waste is used to determine if the waste is restricted from land disposal or could potentially be an environmental or health risk. The plant also has an extensive on-site laboratory that is used to characterize the analytical composition of waste streams as described in the following section.

Compositional Analysis of Process Wastes

The test methods are designed to provide qualitative and quantitative compositional information on waste materials destined for incineration or disposal. Only those analytes contributing greater than 10% of a total gas chromatograph/mass spectrometry (GC/MS) signal will be identified in the compositional analysis. Non-volatile samples are analyzed by infrared and elemental analysis to help define product class.

Samples for compositional analysis are evaluated for volatility by oven evaporation or other appropriate test. Samples containing over 80% volatiles (evaporative loss) or less than 20% volatiles are analyzed by GC/MS or infrared spectroscopy (IR), respectively. Samples with an intermediate volatiles content will be analyzed by the best available technique, possibly including fractional distillation, headspace analysis or solid phase extraction, followed by GC/MS and/or IR.

Where oven evaporation could result in polymerized or hydrolyzed solids, GC analysis will be used to estimate volatile components.

Where the Non-Volatile (NV) content is greater than 20%, the dish residue is analyzed by the appropriate FTIR and/or elemental analysis technique and composition based on interpretation of this data along with knowledge of the process.

Where the NV is less than 20%, the sample will be analyzed by GC/MS and components over 20% of the total chromatogram area (or GC/FID area percentage) identified as nearly as possible by retention time, mass spectral interpretation and library matching. GC quantification is preferable to GC/MS due to the tendency of the MS detector to become saturated and give erroneously high percentage for less intense peaks.

Where the NV is between 20% and 80%, separation and evaluation of each fraction will be done by the best available technique.

Because of the variability of samples involved, analytical methodologies will vary. Records will be kept of each sample analysis history and a qualified chemist knowledgeable of the plant products and analytical techniques will review analytical data. Identification of individual components will, in many instances, be limited to product classes due to the similarity of analysis for different products in a group.

Sampling Methods

Note that sampling methods are listed by storage vessel and physical state of the hazardous waste. Sampling methods vary for a specific waste depending on storage vessels.

Drummed Waste

Free flowing liquids will be sampled by using a glass colliwasa device and procedures as described in SW-846, *Test Methods for Evaluation of Solid Waste, Volume II, Physical/Chemical Methods*, Subsection 9.2.2.4 and 9.2.3 dated 1986.

Viscous Liquids are sampled using a thief sampler method similar to American Society of Testing and Materials (ASTM) D 140-70, *Crushed or Powdered Material*.

Trailers

The first method is used primarily for waste solvents. It is the Weighted Bottle Method as described in SW-846, *Test Methods for Evaluation of Solid Waste, Volume II, Physical/Chemical Methods*, Subsection 9.2.2.4 dated 1986. The only modification is that the bottle is mounted on a pole equipped so that the bottle cap can be removed and replaced while the bottle is in the liquid.

The second sampling method is the Sample Tap as described in ASTM D 140-70 Section 9. Normally trailer contents are not recycled during sampling.

Tanks

Tanks are sampled using the Sample Tap Method as described in ASTM D 140-70 Section 9. Tanks are routinely recycled during sampling.

Ponds, Basins and Sumps

Ponds, basins, and sumps are sampled using sampling ports or the Dipper Sampler as described in SW-846, *Test Methods for Evaluation of Solid Waste, Volume II, Physical/Chemical Methods*, Subsection 9.2.2.4 dated 1986.

Solids and Ash

Solids and ash are sampled using the Scoop and Shovel as described in SW-846, *Test Methods for Evaluation of Solid Waste, Volume II, Physical/Chemical Methods*, Subsection 9.2.2.4 dated 1986.

TABLE 1: WASTE ANALYSES, RATIONALE, AND FREQUENCY

Disposal Method	Parameter	Test Method	Rationale	Frequency
Neutralization/ Hydrolysis	Reactivity	Based on known characteristics of materials in the waste stream	Safety; Establish operating conditions; Hazardous waste classification	Footnote 4
	Ignitability	ASTM D-93-79: Flash Point, Pensky Martens Closed Cup ^{2,3}	Safety; Hazardous Waste Classification	Footnote 4
	Composition	Sistersville Plant GC/MS Method See Compositional Analysis of Process Wastes	Safety; Aid in determining proper disposal method	Footnote 4
Biodegradation	Reactivity	Based on known characteristics of materials in the waste stream	Safety; Hazardous waste classification	Footnote 4
	Corrosivity	ASTM G-1-72: Standard for preparing, cleaning & evaluating corrosion test specimens ¹	Safety; Determine materials of construction; Hazardous waste classification	Footnote 4
	Ignitability	ASTM D-93-79: Flash point, Pensky Martens Closed Cup ^{2,3}	Safety; Hazardous Waste Classification	Footnote 4
	Composition	Sistersville Plant GC/MS Method or process knowledge. See Compositional Analysis of Process Wastes	Safety; Aid in determining proper disposal method	Footnote 4
Land Disposal	Reactivity	Based on known characteristics of materials in the waste stream	Safety; Hazardous waste classification	Footnote 4
	Corrosivity	ASTM G-1-72: Standard for preparing, cleaning, & evaluating corrosion test specimens ¹	Safety; Determine materials of construction; Hazardous waste classification	Footnote 4
	Ignitability	ASTM D-93-79: Flash Point, Pensky Martens Closed Cup ^{2,3}	Safety; Hazardous waste classification	Footnote 4
	TCLP Metals	SW 846 1311 (Toxicity Characteristic Leaching Procedure)	Compare with LDR Treatment Standards; Hazardous waste classification	Footnote 4
	Lead	SW 846 6010C or 6020A	Same	Footnote 4
	Mercury	SW 846 7470A, 7471B, or 6020A	Same	Footnote 4
	Arsenic	SW 846 6010C or 6020A	Same	Footnote 4
	Selenium	SW 846 6010C or 6020A	Same	Footnote 4
	Barium	SW 846 6010C or 6020A	Same	Footnote 4
	Cadmium	SW 846 6010C or 6020A	Same	Footnote 4
	Silver	SW 846 6010C or 6020A	Same	Footnote 4
	Chromium	SW 846 6010C or 6020A	Same	Footnote 4
	Nickel	SW 846 6010C or 6020A	Same	Footnote 4
	Free Liquids	Method 9095: Paint Filter Test	Determine the presence of Free Liquids	Footnote 5

TABLE 1: WASTE ANALYSES, RATIONALE, AND FREQUENCY

Disposal Method	Parameter	Test Method	Rationale	Frequency
	Composition	Sistersville Plant GC/MS Method or process knowledge. See Compositional Analysis of Process Wastes	Safety; Aid in determining proper disposal method	Footnote 4
Equalization Basin/ Panic Pond/ Diversion Basin	Concentration of 19 Volatile Organic Compounds	EPA Method 624 GC/MS Methods for compounds listed in Parameters and Rational.	Compare with SDWA MCL's for selected compounds potentially present at the facility.	Footnote 6
	Arsenic	SW-846 6010C or 6020A	Compare with SDWA MCL's for selected compounds potentially present at the facility.	Footnote 6
	Barium	SW-846 6010C or 6020A	Same	Footnote 6
	Cadmium	SW-846 6010C or 6020A	Same	Footnote 6
	Chromium	SW-846 6010C or 6020A	Same	Footnote 6
	Lead	SW-846 6010C or 6020A	Same	Footnote 6
	Nickel	SW-846 6010C or 6020A	Same	Footnote 6
	Mercury	SW-846 7470A, 7471B, or 6020A	Same	Footnote 6
	Selenium	SW-846 6010C or 6020A	Same	Footnote 6
	Silver	SW-846 6010C or 600A	Same	Footnote 6

1. Not all wastes are tested. Similar corrosion rates are assumed for wastes of similar composition.
2. Or ASTM D-56 Flash Point TAG Closed Cup.
3. Or ASTM D-3278 Flash Point SETA.
4. When process or operation generating the waste has changed such that the composition of the waste changes.
5. Dewatered Sludge weekly; other solids periodically as deemed necessary to ensure compliance.
6. When the action leak rate has been exceeded.

Additional Requirements for Waste Generated Off-Site

The internal communications network and procedures help insure that off-site wastes received by this facility are in agreement with the accompanying manifests. Prior to shipment, the Sistersville Environmental Protection Department would be contacted to approve the waste and coordinate with the generating facility for its shipment and arrival at the Sistersville Plant. The majority of off-site wastes received would be from other MPM facilities. Before off-site wastes are processed, the facility generating the waste is responsible for providing an analysis of the waste. This analysis is to accompany the manifest. Occasionally, wastes generated off-site are analyzed by the Sistersville Plant as an additional safeguard.

Each shipment of hazardous waste received from an off-site facility will be inspected and, if necessary, analyzed to determine whether it matches the identity of the waste specified on the accompanying manifest. Analysis of waste shipments will be repeated when the results of the waste inspection indicates that the hazardous waste received does not match the waste designated on the accompanying manifest.

Additional Requirements for Ignitable, Reactive, and Incompatible Wastes

The reactivity/incompatibility statements on the SDSs do not reflect additional waste analysis requirements as defined in 40 CFR 264.13(b)(6) or 264.17. These statements take into account the guidance provided by 40 CFR 261.33, the National Fire Protection Association (NFPA) definitions and the accumulative judgment of personnel in the EP Department, generating departments, laboratories, and Technology Group to classify hazardous wastes and to treat, store, or dispose of the waste.

Specifically, the Sistersville Plant classifies a waste as reactive if it exhibits any of the following properties:

- It is normally unstable and readily undergoes violent change without detonating.
- It reacts violently with water.
- It forms potentially explosive mixtures with water.
- It generates toxic gases, vapors, or fumes, when mixed with water, in a quantity sufficient to present a danger to human health or the environment.
- It is a cyanide or sulfide bearing waste which, when exposed to pH conditions between 2 and 12.5, can generate toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health or the environment.
- It is capable of detonation or explosive reaction if it is subjected to a strong initiating source or if heated under confinement.
- It is readily capable of detonation or explosive decomposition or reaction at standard temperature and pressure.
- It is a forbidden explosive as defined in 49 CFR 173.51, a Class A explosive as defined in 49 CFR 173.53, or a Class B explosive as defined in 49 CFR 173.88.

To further classify wastes in terms of reactivity (stability), the Sistersville Plant uses a hazard rating system on the SDS. Its definitions are as follows:

Rating = 1 Normally stable material.

Rating = 2 Materials which are mildly reactive in the presence of contaminants or at elevated temperatures. The heat of reaction will not raise the temperature above the boiling point of the material.

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Rating = 3 Materials which are vigorously reactive in the presence of contaminants or at elevated temperatures. The heat of reaction will raise the temperature above the boiling point of the material.

Rating = 4 Materials which may explode by mechanical shock or under conditions of abnormal temperature or pressure.

Rating = W Materials which are reactive with water.

In addition, for incompatibility, statements on the SDS do not reflect additional waste analysis requirements as defined in 40 CFR 264.13(b)(6) or 264.17.

Waste Analysis Requirements Pertaining to Land Disposal Restrictions

A hazardous waste determination is completed for all waste streams generated at the Sistersville Plant or received from an off-site source. It is first determined if the waste stream is excluded from regulation as a solid waste as provided for in 40 CFR 261.4. If the material is a solid waste, it is then determined whether the waste is considered RCRA hazardous. Waste streams classifications are taken into account when evaluating the appropriate disposal method and also in determining what, if any, additional analytical characterization will be done.

Hazardous wastes specifically destined for land disposal must meet the criteria detailed in 40 CFR 268, *Land Disposal Restrictions*. The Sistersville Plant complies with the treatment standards set forth in these regulations for all applicable land disposed waste. Two waste management units operated by the Sistersville Plant are covered by the land disposal restrictions section of the regulations. These are the Diversion Basin/Equalization Basin units (or surface impoundments) of the process sewer system and the No. 2 Landfill.

Waste Analysis

Table 2 lists the hazardous wastes typically disposed in the No. 2 Landfill. Note that the list of hazardous waste sent to the No. 2 Landfill is quite restricted.

TABLE 2: TYPICAL HAZARDOUS WASTE MANAGED IN No. 2 LANDFILL

Waste Name	EPA Waste Code(s)
Absorbent Booms	F039, F005, various U & P listings
Kiln Ash & Glass	Derived-- F039, F005, various U & P listings
Kiln Refractory	Derived-- F039, F005, various U & P listings
Sludge Dewatered	Derived-- F005, F039, various U & P listings

The dewatered bio-sludge from the wastewater treatment plant is the largest contributor to the No. 2 landfill. The U-listed waste codes and the F005 waste code are from the kiln quench water. There are typically no U-listed or F005 listed wastes originating from the process sewer. The F039 listing is due to the landfill multi-source leachate that is treated in the WWTU.

The second largest source of hazardous waste routinely sent to the No. 2 Landfill is from the rotary kiln. Kiln ash and glass is collected in the kiln ash hopper and routinely sent to the No. 2 Landfill. Kiln refractory (brick) may also be generated during kiln shut downs and repair. Due to the mixture and derived from rules, these incinerator wastes carry the same waste codes as the waste burned in kiln and therefore the waste codes for this material may vary depending on what waste had been incinerated.

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From time to time hazardous waste soil, debris, or other hazardous waste may be disposed in the No. 2 landfill. Before this type of material can be disposed in the landfill, the soil is sampled and analyzed to determine that the LDR treatment standards have not been exceeded. The type of analyses is dependent on the source of the contaminant and generator knowledge of the contaminant chemistry.

Belts from the sludge dewatering presses are also disposed in the landfill and carry the F039 listing due to contact with or absorption of listed wastewater. Absorbent Booms resulting from cleanup activities are disposed in the landfill.

Dioxin Wastes

The Sistersville Plant does not generate dioxin-containing wastes and does not receive this waste from off-site locations and therefore does not characterize waste streams for this material.

Spent Solvents

The spent solvent streams managed at Sistersville typically include F003 and F005 wastes due primarily to methanol, xylene, and toluene. The F005 listing is associated with the kiln wastewater effluent, cleanup with absorbent booms, and possibly, the plant process sewer system. Some of the wastewater effluent from the kiln discharges directly into the Equalization Basin while some discharges to the Terminal Manhole of the process sewer. Both waste streams carry the F005 spent solvent waste code although historical sampling of the wastewater and knowledge of the characteristics of the kiln wastewater effluent confirm that F005 compounds are not present at levels above the LDR Treatment Standard. The F005 waste code also attaches to the dewatered sludge from the WWTU that is land disposed at the No. 2 landfill.

To monitor the toluene content of the dewatered sludge to insure it meets the LDR treatment standard, the Sistersville Plant has an agreement with the WVDEP to sample the sludge weekly. Sludge samples are tested for total toluene by EPA Method 8260. The small amount of toluene that may be detected in the dewatered sludge did not enter the system as a listed waste, but due to the mixture and derived from rules, the F005 listing from the kiln effluent attaches to the dewatered sludge and any unlisted toluene that may be present. By sampling the dewatered sludge each week, the plant insures that the dewatered sludge taken to the No. 2 Landfill meets the treatment standard for toluene and the F005 listing.

As provided in 40 CFR 268.40(f), there is no requirement to analyze an F003 waste for the methanol treatment standard if the waste exists in combination with an F005 waste that is tested for compliance with the applicable F005 treatment standard. In addition, since toluene is more difficult to biologically degrade than methanol, if the toluene levels are below the respective treatment standard, it is very likely that the methanol would be as well. In addition, historical data collected in association with the NPDES permit for the Sistersville facility confirms that toluene is present at levels below the toluene LDR treatment standard in the wastewater exiting the WWTU.

The F005 waste code attaches to the dewatered sludge due to quench water from the kiln entering the WWTU. The destruction removal efficiency (DRE) of the kiln is a minimum of 99.99% of the incinerated wastes. Due to the mixture and derived from rules; the incinerator effluent carries the same waste codes as the waste destroyed in this unit and therefore the waste code for this effluent will vary depending on what waste is being incinerated. Because of the DRE of the kiln, it would be impossible for the kiln gases scrubbed by the quench water to contribute a level of F005 constituents above the treatment standards for these wastes. Analytical work done during the kiln trial burn confirm the low levels of organic compounds in the kiln wastewater. Most of those compounds are attributed to the wastewater prior to its use in the kiln air pollution control system. Therefore, although the kiln contributes the F005 waste code to the dewatered sludge from the WWTU, it does not contribute any significant levels of F005 solvents to the WWTU and the resulting dewatered sludge.

The kiln ash, glass, and refractory brick also carry the F005 spent solvent listing due to the types of waste

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solvents incinerated in the kiln. The destruction removal efficiency of the kiln insures that the solvents that impart these waste codes to the kiln ash, glass, and refractory are destroyed during incineration and not carried to the waste ash and glass. Samples of the kiln ash and glass are analyzed periodically for toluene, methylene chloride, and acrylonitrile. These compounds have not been detected at concentrations above the method detection limit of 2.5 ppm on a total basis.

Listed Wastes

Most of the listings associated with hazardous wastes disposed in the No. 2 Landfill are due to the mixture and derived from rule and the listings attached from the rotary kiln wastewater effluent. As mentioned above, the listings associated with the kiln wastewater attach to the kiln ash and glass and WWTU dewatered sludge, which are land disposed. Because of the DRE of the kiln, it is known that none of the constituents associated with these listings can be present at levels above the Universal Treatment Standard (UTS) in these two waste streams. As mentioned earlier, historical testing of both the dewatered sludge and the kiln ash and glass confirm this statement.

Other listed wastes being considered for land disposal are first evaluated using generator knowledge of the chemical composition of the waste to determine if any potential exists to exceed a LDR treatment standard. If this possibility exists and the waste is still under consideration for land disposal, then the waste would be analytically characterized using the appropriate analytical methods. The method(s) used would depend on the potential contaminants and on how the treatment standard is based (i.e.) total versus the Toxicity Characteristic Leaching Procedure (TCLP) concentration.

Characteristic Wastes

The types of characteristic waste managed in the surface impoundments are limited to D001, D002, D003 and D018 waste codes. 40 CFR 268.4 allows wastes to be treated in the facility surface impoundments because they meet the minimum technological standards, i.e. they are equipped with groundwater monitoring, double liners, and a leachate collection system. In addition, since the surface impoundments are part of a CWA system, the characteristic can be removed by any means, including dilution or other deactivation through aggregation of different waste streams preceding land disposal. There is also no requirement at this time to identify underlying hazardous constituents in these characteristic wastes. The surface impoundments discharge to the WWTU operated under an NPDES permit issued under section 402 of the CWA. Treatment residues that remain in the impoundments and that exceed treatment standards or prohibition levels are removed annually. The liquid flow rate through the impoundments exceeds the volume of the impoundments and therefore constitutes removal of the liquid residue.

Other characteristic wastes not specifically addressed in this Section may also be disposed in the facility's land disposal units (i.e. surface impoundments and landfill). Prior to disposal these wastes are evaluated using generator knowledge and, if needed, analytical characterization, to confirm they meet the applicable LDR standard(s).

For D001 to D003 characteristic hazardous waste, the treatment standard is deactivation and meet the UTS for all underlying hazardous constituents. Residue from wastes that originally had these waste codes and are disposed in the No. 2 landfill have been treated in the surface impoundment or the incinerator. Both these treatment methods fully de-characterize the wastes so that they no longer carry the characteristic waste code.

Leachates

The Sistersville Plant does not generate or receive any wastes that are regulated as single source leachate.

A multi-source leachate, F039, is generated on-Site from the No. 1 (closed in compliance with the existing Part B Permit) and No. 2 Landfills. This liquid enters the process sewer and attaches the F039 listing to the process sewer water. This waste stream is treated in a WWTU operated under a NPDES permit issued under section 402 of the CWA. The bio-sludge from this system also carries the F039 listing, along with

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others, and is land disposed after dewatering. Wastes that carry a F039 listing are subject to the treatment standards of the P and U listed wastes from which the leachate may be derived. A comprehensive analytical characterization has been completed for the leachate to determine what P- and U-listed wastes are present and in what concentration. Based on this work it has been determined that the only potential constituent of concern in the F039 leachate is toluene. Because of this, all F039 waste generated at the Sistersville Plant and being considered for land disposal is evaluated for toluene content, including use of generator knowledge, to insure compliance with the toluene LDR treatment standard. The F039 listed dewatered sludge is tested weekly to insure continued compliance with the treatment standard.

Lab Packs

Contaminated Debris

The Sistersville Plant does not routinely produce hazardous debris. Debris that is determined to be hazardous waste will be managed according to the standards found in 40 CFR 268.45.

Waste Mixtures and Wastes with Overlapping Requirements

The Sistersville Plant routinely produces hazardous waste with multiple waste codes but only a small number of these are land disposed. These wastes are fully characterized through generator knowledge and/or analytical testing to determine the appropriate treatment standards for the waste. These treatment standards are met prior to land disposal and wastes that carry more than one characteristic or listed waste code will be treated to the most stringent treatment requirement for each hazardous waste constituent of concern.

Dilution and Aggregation of Wastes

The listed waste streams at the Sistersville Plant are not diluted to meet LDR treatment standards prior to land disposal. Listed wastes such as the landfill leachate which enter the process sewer stream are potentially diluted, but typically meet the LDR treatment standards for the constituent of concern, toluene, at the point of generation.

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ATTACHMENT 2 – INSPECTION SCHEDULE

Activity to be Inspected	Frequency	Potential Problem	EP Facilities RCRA Routine Inspection Code
Containers/Storage Area	Weekly	a, b, k	(a) Leaks
Tanks			(b) Corrosion
Discharge Control Equipment	Daily	c	(c) Feed Cut-Off, Bypass or Drain Systems
Data From Monitoring Equip.	Daily	d	(d) Temp & Press Gauges at Design Condition
Seams and Fixtures of Tanks	Daily	a, b	(e) 2 Feet Freeboard (If no overflow control)
Overflow Confinement	Daily	f, g, h, k	(f) Erosion
Surface Impoundments			(g) Wet or Dying Vegetation on Dike
Freeboard Level	Daily	e	(h) Broken or Plugged Drainage System
Impoundment (Dikes, Vegetation)	Weekly	f, g, h	(i) Waste Flow, Gas Flow, Air Flow, Kiln Temp, Scrubber Flow & pH, Level Controls
Storm Events		p	(j) Color and Opacity
Leakage Rate	Daily	a, i	(k) Spills
Incinerators			(l) Fugitive Emissions
Existing Instruments Relating to Combustion and Emission Control	Each minute	15 Monitor i	(m) Emergency Shutdown Control (n) System Alarms
Stack Plume	Hourly	observe & correct, j	(o) Feed Cutoff, Bypass, Drain Press. Relief System
Incinerator & All Equipment	Daily	a, k, l, m, n	(p) Storm Inspection
Loading/Unloading Areas (when in use for hazardous waste)	in use	a,k	
Chem., Phys., & Biological Treatment			
Discharge Control & Safety Equip.	Daily	o	
Data from Monitoring Equip.	Daily	d	
Seams & Fixtures of Equip.	Weekly	a, b	
Overflow Containment	Weekly	f, g, h	

ATTACHMENT 3 - PERSONNEL TRAINING

OUTLINE OF THE TRAINING PROGRAM

Environmental Protection Department personnel are trained in safe operating procedures and in responding to emergency situations. This training includes emergency procedures, equipment, and communication systems. New employees complete this training within six months of beginning employment. An annual review of the training program is conducted in a manner relevant to the individual's job.

The Environmental Protection Department also receives services from the production units. Table H1-1 of the permit application outlines training provided to plant personnel who provide these services.

Job Titles/Job Description

The following is a list of the general job titles within the Environmental Protection (EP) Department, for both hourly and salary personnel. Several of the job titles encompass more than one position such as the EP Operator listing. Individuals trained as an EP Operator are qualified to operate several systems within EP, although they are only assigned one system during a given shift. Both the Environmental Specialist and Environmental Engineer job titles also represent personnel who have differing responsibilities. There is an Environmental Specialist who has primary responsibility for the operation of the incinerator and one with primary responsibility for operation of the wastewater treatment unit. The Environmental Engineer positions also have specific responsibilities in the areas of water, air, RCRA and/or community right to know issues. The Utility Supervisor provides supervision of the hourly operations personnel in the EP and Energy Systems. The Utility Operations Manager is responsible for daily operations of the EP/ES Department while the EHS Site Manager is responsible for compliance, technical, and permit issues. The Clerk is responsible for providing administrative support functions to the department.

The number and type of positions vary with time as do the specific job descriptions. This information is updated as changes are made and is available at the EP Department.

- Dumpster Truck Driver
- E P Operator
- Team Leader ES
- Clerk
- Environmental Specialist
- Environmental Engineer
- EHS Compliance Site Manager
- Facilities Manager EP/ES

Training Content Frequency and Overview

Paragraph 264.16 requires that facility personnel complete training in the following areas:

- A. Hazardous waste management procedures, including contingency plan implementation.
- B. Effective emergency response by familiarization with emergency procedures, equipment and systems, including:
 - a. Using and inspecting facility emergency and monitoring equipment
 - b. Parameters for automatic waste feed cut-off systems
 - c. Communication or alarm systems
 - d. Response to fires or explosions
 - e. Response to groundwater contamination incidents
 - f. Shutdown of operations

These requirements are fulfilled by the training sessions described below.

RCRA Overview/Facility Review

This session is designed to explain RCRA hazardous waste management practices pertinent to Treatment, Storage, and Disposal (TSD) facility personnel. It is tailored specifically towards the hands-on facility operators and its topics include waste identification, site procedures, labeling, and the use and management of containers, tanks, surface impoundments, and landfills. The Sistersville Plant uses this package to fulfill the training requirements listed in *item "A"* above. The EP Department provides an annual overview training of RCRA to plant personnel. The objective is to go over updates such as personnel changes and equipment modifications and to address any timely issues and questions.

Spill Prevention Control and Countermeasures (SPCC), Contingency Plan, and Plant Spill Procedure

This session is composed of a presentation of the SPCC Plan, a review of the RCRA Contingency Plan, and a review of the Plant Spills Procedure. These topics are presented annually in one training session. The EP Department conducts this session for the technical staff annually. This session fulfills training requirements of items B.d and B.e above.

Operating Procedures (OPs) (various procedure numbers)

OPs are written documents that specify safe procedures for operating equipment used in a job classification. Some of this equipment includes the kiln, and dumpster truck. The operating procedures for the reactor are in the Uphill Operator OPs. The OP manual generally requires 15 to 45 minutes to read. It includes topics such as emergency and monitoring equipment, automatic waste feed cut-off systems, and shutdown of operation. These OPs are included in the operator's on-the-job training upon initial assignment and the Utility Supervisor is then responsible to assure that the operator reviews the proper OPs annually. OPs fulfill training requirements of items B.a, B.b, and B.f above.

Emergency Communications (TSD Emergency Procedures)

The Environmental Protection Department has two alarm systems, one for responding to flammable or toxic vapor clouds and another for responding to fires. To respond to these alarms, the Facility has a written procedure that includes topics such as ceasing operation of vehicles inside the emergency perimeter, elimination of ignition sources, assembling at the rally point, communications/chain of command, and evacuation. EP Personnel review the two alarm systems and the emergency response procedure with the operating staff annually. The Utility Supervisor reviews both alarm systems and the emergency response procedure with the operators annually, also in one session. These sessions fulfill training requirement of item B.c above.

Plant Spills Reporting and Response Procedure

This training pertains to the EP Technical Staff and educates those personnel on how to evaluate a spill scenario to determine proper notification and reporting requirements to meet both regulatory and plant policy requirements.

Training Director, EP Department

The training coordinator of the EP Department can change from year to year. This individual will be someone trained in hazardous waste management procedures. Training is coordinated through the Plant's training department and will be conducted by the individual with the appropriate credentials.

Relevance of Training to Job Position

The plant training department keeps records on all training and updates files on all personnel as training is completed. They also maintain a training schedule to ensure that all training topics are presented to the appropriate job classification at the required frequency.

Training for Emergency Response

Because the EP Department is part of a production plant, firefighting and medical services are provided by the plant. The most important factor specific to the EP Department is that the Shift Team Leaders are chiefs of the fire brigades and therefore they benefit from extensive training. The overall program of training for emergency response is comprised of five activities.

- 1) Fire Brigade -- Training is highlighted by the annual fire school for key personnel and fire chief participation.
- 2) Emergency Medical Service - approximately 16 First Responders, one registered nurse, and one physician on call.
- 3) Drills - Assistance to COVIEO (annually)
 - a. Internal fire brigade, training quarterly, drills annually
 - b. Test of the Autocall System (biweekly)
- 4) COVIEO - Central Ohio Valley Industrial Emergency Organization
- 5) Internal to the Waste Treatment Facility, all Facility operators are trained to respond effectively to emergencies and are familiar with emergency procedures, emergency equipment, and emergency systems. They receive training annually on the following:
 - a. Procedures for Using, Inspecting, Repairing, and Replacing Facility Emergency and Monitoring Equipment;
 - b. Key Parameters for Automatic Waste Feed Cut-Off Systems;
 - c. Communications or Alarm Systems;
 - d. Response to Fires;
 - e. Response to Groundwater Contamination Incidents; and
 - f. Shutdown of Operations within the Facility.
- 6) Fire Extinguisher Training - Training is conducted annually. The instruction includes types of extinguishers (classes, sizes, extinguishing media), limitations, and how to use a portable fire extinguisher.

Plantwide Training that Provides Services to the E P Department

Fire Brigade

The plant maintains a fire brigade made up of members from each of the rotating shifts and a small group of back-up members from the day shift personnel. This brigade responds to flammable vapor clouds, chemical spills, fires, and confined space/rope rescue situations. The staff includes approximately 60 people, a 1000 gallon per minute pump truck with a 500--gallon booster tank, a 500--gallon foam tank, and an accessory foam system. Each rotating shift has a fire brigade chief on duty. The plant sends key personnel to a fire training school annually, provides continuing training in-house, and conducts drills annually.

Emergency Medical Service

The plant provides training to maintain a staff of certified Emergency Medical First Responders. There is an onsite Registered Nurse in the dispensary during day hours excluding weekends. A physician is

contracted to provide services to the plant and to be onsite half a day per week. The fire brigade members are also trained in CPR and Basic First Aid as are many other members of the plant population. Sistersville General Hospital is located approximately seven (7) miles from the plant and is capable of responding as needed with ambulance service and trained EMT's.

Implementation of Training Program

In accordance with paragraph 40 CFR 264.16, EP Department Personnel training is implemented as listed below:

- 1) Complete training outlined above.
- 2) New or transferred employees complete within 6 months the training outlined above.
- 3) New or transferred employees complete the above training requirements before working in unsupervised jobs.
- 4) Personnel take part in an annual review of the above training.

In accordance with paragraph 40 CFR 264.16, EP Department Personnel training is documented as listed below:

- 1) Training records are documented and include the name of the person trained, date of training, and type of training.
- 2) Training records on current personnel are kept until closure of the facility.
- 3) Training records on former employees are kept at least three years after the employee ceased employment.

ATTACHMENT 4 – CONTINGENCY PLAN

GENERAL INFORMATION

The Sistersville Plant is located approximately six (6) miles south of Sistersville, W.V. (Ohio River mile 145.3) on State Route 2. The Sistersville Plant is located in a rural setting and is situated on approximately 1300 acres of land. The operating facilities are situated centrally and encompass approximately 75 acres. The Sistersville Plant is a manufacturing facility for the production of a broad range of silicone products.

The RCRA Contingency Plan is to be used for incidents that occur at RCRA hazardous waste facilities and threaten human health or the environment. This plan will be activated if:

- 1) Fire or explosion results in the need for outside assistance (i.e. additional firefighting personnel or medical attention.)
- 2) A reportable quantity (as defined by 40 CFR 302) of a hazardous waste or hazardous waste constituent is released to the environment and is of a magnitude that would impact the environment beyond the facility property boundaries.

Some examples of the units that this plan applies to are the hazardous waste incinerator, Diversion Basin/Equalization Basin, and the Hydrolysis Reactor.

There are several other plant procedures and plans that have been developed in case of an emergency at this facility. If conditions warrant during an incident at a RCRA unit, these plan and procedures would be put into effect in addition to the Contingency Plan. These plans/procedures, listed below, are kept at the plant's Environmental Protection Department and in the office of the plant's emergency coordinator. They are updated regularly to help insure their effectiveness in the event of an emergency.

- Spill Prevention Control and Countermeasure Plan
- Plant Spills Procedure
- Plant Emergency Procedures
- Central Ohio Valley Industrial Emergency Organization (COVIEO) Plan.

EMERGENCY COORDINATORS

The Emergency Coordinators are the Shift Team Leaders, which can be reached at Extensions. 8746, 8430, 8610 or 8844 or Plant FM radio unit No. 13, 115, 1, 2, or 24.

The Shift Team Leader position is staffed at all times and during most shifts there are two (2) individuals filling this position per 12-hour shift. At least one of these individuals per shift is designated the Fire Chief and is responsible for coordinating all environmental emergency response measures and therefore acts as the plant's Emergency Coordinator. This individual is familiar with all aspects of the Sistersville Plant Contingency Plan, all operations and activities at this facility, the location and characteristics of waste handled, the location of all records within the facility, and the facility layout. Each Emergency Coordinator has the authority to activate resources needed to carry out the Contingency Plan. Also, the Emergency Coordinator can and will call in the appropriate plant management personnel in the event of an emergency.

IMPLEMENTATION

Implementation of the above plans could occur at any time without having to activate the Contingency Plan, or these plans could be activated in conjunction with the Contingency Plan.

The master copy of the Contingency Plan is kept in the EP Department's office building. A copy is also available in the emergency coordinator's office. Copies of this plan are provided to each EP Department staff member and to each plant foreman. The EP Department is responsible for revising this plan when necessary and sending updated copies to each person holding a copy of the plan. The Contingency Plan

will be reviewed and revised, if necessary, whenever:

- Applicable regulations change;
- The plan fails in an emergency;
- The facility changes in such a way that materially increases the potential for a release, fire, or explosion of hazardous waste;
- The Emergency Coordinator list changes.

EMERGENCY ACTIONS

Notification

The Emergency Coordinator must assess possible hazards to human health and the environment. If evacuation of local areas is advisable, the Emergency Coordinator will notify the appropriate local authorities and be available to help decide which areas might be affected. He will refer to the Central Ohio Valley Industrial Emergency Organization (COVIEO) Plan in this instance.

The West Virginia Department of Environmental Protection will be immediately notified in the event of an incident requiring implementation of the Contingency Plan. The 24-hour phone number is 800-642-3074 and details to be reported are outlined in the Plant's Spill Reporting Procedure.

Following implementation of the Contingency Plan, the Environmental Protection Department manager or his designee will complete the following:

- 1) Notify the Secretary of the West Virginia Department of Environmental Protection (WVDEP) that cleanup from the incident is completed; no incompatible wastes were handled in that affected areas until cleanup was completed; and all emergency equipment is once again fit for use.
- 2) Note in the operating log the time, date and details of any incident requiring implementation of the plan.
- 3) Within 15 days after the incident, submit a written report to the Secretary of the WVDEP which will include the information specified in 40 CFR 264.56(j).

ACTIONS

If the Emergency Coordinator determines that the facility has had a release, fire, or explosion of hazardous waste to the air, soil, or surface water that threatens human health or the environment beyond the confines of the facility property boundary, he will implement the Contingency Plan. Actions taken by the emergency coordinator during and after an incident include the following:

Identify the character, source, amount and (if applicable) aerial extent of released materials. When a release or spill from a hazardous waste management facility occurs, the coordinator will determine:

The character of the material released. This can be accomplished by:

- Questioning people involved or
- Examining the operating log for that facility associated with the release.

Having determined what the released material was and a quick examination of the MSDS for that material will tell the emergency coordinator how to respond in handling the release. If the material cannot be identified a sample will be taken and sent to the plant lab for analysis.

The amount of material released will be determined by:

- The change in level in tanks from operating record.
- The volume (capacity) of containers (drum, dumpster, etc.) - (examine weight on disposal card

- attached to container).
- Calculate volume of contained, spilled material.
 - Mass balance calculations as determined by the engineer in charge of that unit.

In the event that a release or spill of a hazardous material occurs from a hazardous waste management facility that may threaten human health or the environment due to exposure caused by release to the air the Coordinator can assess this potential by:

- Examining the MSDS for the material released and estimating the volume lost.
- Contacting the plant Safety Department (i.e. industrial hygiene) to test for potential exposure.
- Evaluating the direction of the vapor cloud via windsocks located around the plant.

Take all necessary measures to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous wastes or hazardous waste management units. This may include stopping processes, collecting and containing released waste, or removing/isolating containers.

If the affected unit stops operations in response to the incident, personnel will continue to monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes or other equipment, as appropriate. All other systems shutdown in response to the incident will not be started up until a complete investigation has been conducted by the emergency coordinator demonstrating that the incident is under control. Once this investigation has been made, those systems shutdowns in order to reduce the potential recurrence of or spreading of fires, explosions, etc. can be started as deemed appropriate.

No hazardous waste treatment facility can be reactivated if an incident occurred from that facility that activated the Contingency Plan until:

- a thorough cleanup of released material has occurred
- a Plant Investigation has been conducted by management, which determined the cause of the incident, and
- appropriate actions are taken to eliminate future occurrences.

After the emergency, provide for treating, storing, or disposing of recovered waste, contaminated soil, or surface water, or other material resulting from the incident. The method or process for treating, storing, or disposing of wastes or contaminated materials will depend on the material released and the resultant contamination. In some instances a release or spill from a storage facility can be cleaned up by hosing the contamination to the process sewer and the wastewater treatment facility. Since these facilities are located on concrete pads contamination can be easily removed. If a material is released that is not water soluble or biodegradable then the material can be cleaned up via vacuum truck or absorbent material, or by flushing the material with a solvent and disposing of it by incineration.

If the released material contaminates surface water, this material can be removed by using a vacuum truck or by pumping the contaminated surface water using a sandpiper pump to a dumpster. This material will be incinerated or sent to the wastewater treatment facility depending on its nature.

If the release results in contaminated soil, it would be removed, dewatered and disposed of in the No. 2 Landfill if all applicable Land Disposal Restrictions (LDR) were met. If the soil does not meet LDR requirements then arrangements will be made for treatment and disposal. Recovered liquid contents from the soil would be incinerated or sewerred.

In affected areas, ensure that no waste that may be incompatible with the released material is treated, stored, or disposed of until cleanup from the incident is completed. Many of the wastes handled at RCRA facilities can be treated by sewerage, hydrolysis in R-72, placed in the filter cake vat, incinerated, or landfilled. Also available is data supplied on the Material Safety Data Sheets and in various chemical handbooks available in the EP Department. This information is to be used to prevent wastes from being stored or treated at facilities not designed to handle them. Finally, to insure that no incompatible wastes are brought into a facility where an incident (release) has occurred no waste will be allowed to be taken into

the boundary of that facility (dumpster movement controlled by Emergency Coordinator) until deemed safe by the Emergency Coordinator.

Clean all emergency equipment used during the incident and ensure that this equipment is fit for its intended use before normal operations are resumed. To do this, the coordinator will complete documentation of all equipment used, how it was cleaned, and repaired (if necessary).

If the release from a RCRA hazardous waste facility requires evacuation from any area of the plant then an applicable Evacuation Plan will be initiated. These plans are contained in the Plant Emergency Procedures Manual that is located in every department in the plant.

Spills and Leaks

Standard Operating Procedures (SOP's) for each hazardous waste facility have been developed which address the proper operation of the equipment in order to prevent leak and spills from that unit.

If a leak or a spill occurs from tanks or containers, it will be cleaned up as discussed previously in this attachment. If a tank or container is discovered to be leaking, the contents of that vessel will be removed immediately and placed in another vessel properly permitted to receive this waste. If a tank develops a leak, its contents will be removed, it will be properly cleaned, and then it will be inspected by the Maintenance Department. It will not be placed back into service until the necessary repairs have been completed and documented.

In the event of a release of material to the ground, the release will be contained using temporary clay dikes, sand bags, or absorbent materials. This will help prevent the release from reaching a body of surface water and minimize its impact on human health and the environment.

In the event that temporary dikes need to be constructed, clays and the equipment necessary to construct these dikes are located on-site, thereby minimizing response time to a release. A supply of sand bags and absorbent materials are also kept on-site to help minimize the impact of a release.

Surface Impoundment Spills and Leakage

Emergency Repairs

The following information describes the steps to be taken if the surface impoundment should have to be removed from service due to a sudden unexplained drop in the liquid level or if the dike leaks.

Stopping Waste Addition

All flows to the basin would be immediately stopped. All valves that allow flow to the basin would be closed. The Diversion Basin or Equalization Basin can each be by-passed completely and continue normal operations.

Containing Leaks

If any surface leakage had occurred, it would be contained and collected. Containment would be achieved by building temporary clay dikes using on-site equipment and materials (bulldozers, backhoes, dump truck). Any leakage would be collected using a vacuum truck and disposing of this waste would be accomplished through the plant's wastewater treatment unit (WWTU).

Stopping Leaks, Preventing Catastrophic Failure, Emptying the Impoundment

By emptying the impoundment, a catastrophic failure of the impoundment would be mitigated and damage to the liner could be assessed and repairs effected. The impoundment would be emptied by pumping the waste to the WWTU using an existing line and pump and by using a 4,000-gallon

vacuum truck. Any solids would be dewatered and disposed of in the No. 2 Landfill.

With the impoundment empty, the area of the leak would be repaired. The extent of the repair would depend on the location of the leak (i.e. bottom liner, wall). Completion of the repairs would meet all governmental requirements to reassure the integrity of the basin. Certification will be obtained from a qualified engineer in accordance with 40 CFR 264.226(c) attesting to the structural integrity of the dike.

If the impoundment is removed from service in accordance with the requirements of 40 CFR 264.227 and is not being repaired, it will be closed in accordance with 40 CFR 264.228. Any notifications required under 40 CFR 264.227 would be made.

The monitoring and inspection program established for the ~~Panic Pond~~ Diversion Basin/Equalization Basin is included in Attachment 2 and includes specific response actions the facility will implement in the event of a leakage rate equal to or greater than the action rate defined in the permit.

EMERGENCY EQUIPMENT

Various emergency equipment, such as absorbent booms, fire extinguishers, pumps, and oil skimmers, are located at or near the RCRA waste facilities and are used as needed when activating the Contingency Plan.

COORDINATION AGREEMENTS

The Sistersville Plant is a member of the Central Ohio Valley Industrial Emergency Organization (COVIEO). General instructions pertaining to activation of the COVIEO Plan are contained in Section ER-V-2 of the Plant Emergency Response Procedures Manual. A manual describing the COVIEO system is located in the Emergency Coordinators office as well as other Emergency Operation Centers throughout the plant. The Shift Team Leader acts as the designated emergency coordinator.

In order to assure assistance will be given in times of emergency, Mutual Aid Agreements are in place with the Sistersville Volunteer Fire Department, the Tyler County Office of Emergency Services, the Saint Marys Volunteer Fire Department, and the Pleasants County Office of Emergency Services have been executed. Copies of these documents are on file in the Plant Emergency Response Procedures Manual.

Sistersville General Hospital is the primary care hospital used by the facility. In addition, a relationship is in place with the local police departments and Sheriff's office to respond to terror threats and other law enforcement situations.

EVACUATION PLAN

Policy ER-I-2 of the Plant Emergency Response Procedures Manual deals specifically with personnel evacuation in the event of an emergency. All personnel, department leaders and the Emergency Coordinator are trained and familiar with the applicable departments rallying point(s) and evacuation route(s).

The Landfill Dam Emergency Plan prepared for the WVDEP Division of Water and Waste Management, Dam Section details the monitoring and action plan for the No. 2 Landfill.

REQUIRED RECORDS

Incident reports and subsequent investigations are completed on all emergencies as defined in 40 CFR 264.51. These investigations gather the information needed to fully characterize the nature and extent of the emergency and attempt to determine a root cause for the incident. Upon determining a root cause, a cross-functional team is tasked with determining what practices and/or procedures should be modified or implemented to help insure the incident is not repeated. Part of the incident report process includes identifying all reporting responsibilities including follow-up to insure the appropriate notifications have been

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made. The report to the Regional Administrator or his designee, will include all the information listed in 40 CFR 264.56(j).

Copies of all incident reports, investigations, recommendations and agency notifications are kept in the various facility operating records.

FLOOD CONTINGENCY PLAN

In the event of a potential flood that may affect plant operations, the following actions will be implemented for the surface impoundments.

- (A) Every two (2) hours phone the Willow Island Dam (Phone: 740-374-8710)and the Hannibal Dam (Phone: 740-483-2305 or 304-455-2607) and get the information to fill out Attachment A, "Flood Worksheet".
- (B) The present river level and the projected flood crest at the plant will be calculated from data collected from the United States Army Corps of Engineers Stations at both the Willow Island and the Hannibal dams (Using Attachments A and B).

Calculating Ohio River Levels Using Attachments A and B:

- (1) Collect Willow Island gauge readings (upper & lower).
- (2) Collect Hannibal lower gauge reading.
- (3) Add Willow Island upper gauge reading to Hannibal lower gage reading. When Willow Island reaches flood stage of thirty-seven (37) feet, the lower gage reading must be used. Subtract twenty (20) feet from Willow Island's lower gauge reading once flood stage has been reached.
- (4) Divide that number by two (2). This number is the average.
- (5) Using the average refer to Attachment B to get the water level in feet of elevation at the plant. This will be the number that you will be using to help in making your action planning.

Calculating Ohio River Project Crest Levels Using Attachments A and B:

- (1) Collect Willow Island projected crest.
 - (2) Collect Hannibal's projected crest.
 - (3) Add Willow Island's projected crest & Hannibal's projected crest.
 - (4) Divide that number by two (2). This number is the average.
 - (5) Using the average number, refer to Attachment B to get the water level in feet of elevation at the plant. This will be the number that you will be using to help in making your action planning.
- (C) If the projected rise is 615 feet or less, then no further actions need to be taken.
- (D) If the projected rise is greater than 615 feet, take the following actions:
- (1) Notify plant management.
 - (2) Notify EP department personnel.
 - (3) Notify plant production team leaders of potential flood situation and alternate routes to reach the plant.
- (E) If the projected rise is greater than 627 feet, take the following actions:
- (1) Notify plant management of the need to implement plant production shutdown procedures due to potential inundation of portions of the WWTU.
 - (2) Notify EP Department personnel of the need to suspend flow of landfill leachate to the process sewer.
 - (3) Notify EP Department personnel of the need to implement the evacuation of liquids from the surface impoundments.
 - (4) Process the evacuated wastewater through the on-site WWTU.

(EXAMPLE OF A COMPLETED SHEET)

Flood Worksheet

DATE: May 17, 2004

TIME: 1:00 PM

	UPPER	LOWER	PROJECTED CREST
WILLOW ISLAND LESS THAN FLOOD STAGE:	11.87		30
WILLOW ISLAND AT FLOOD STAGE:	()-20=	
HANNIBAL LOWER GAGE READING:	22.70		29
TOTAL	34.57		59

(IF WILLOW ISLAND UPPER GAGE READING IS LESS THAN FLOOD STAGE (37 FEET) ADD WILLOW ISLAND UPPER GAGE READING TO HANNIBAL LOWER GAGE READING.)

(IF WILLOW ISLAND UPPER IS AT OR GREATER THAN FLOOD STAGE (37 FEET) ADD WILLOW ISLAND LOWER GAGE READING TO HANNIBAL LOWER GAGE READING.)

AVERAGE:	17.29	29.5
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SISTERSVILLE PLANT LEVEL OUTFALL 001	607.02
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SISTERSVILLE PLANT LEVEL AT SUGAR CAMP RUN BY ALKYL HALIDE

PROJECTED CREST AT THE SISTERSVILLE PLANT	619.5
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COMMENTS OR OBSERVATIONS:

Using Attachment B for present level elevations you find that the level should be between 607 feet and 608 feet at the Sistersville Plant.

Using Attachment B for projected crest you would expect it to crest at 619.5 feet at the Sistersville Plant.

FLOOD ELEVATION PREDICTIONS			
AVERAGE OF WILLOW ISLAND UPPER GAGE & HANNIBAL LOWER GAGE	AVERAGE OF WILLOW ISLAND LOWER GAGE & HANNIBAL LOWER GAGE	PROJECTED LEVEL @ PLANT AVERAGING W.I. UPPER & HANN. LOWER	PROJECTED LEVEL @ PLANT AVERAGING W.I. LOWER & HANN. LOWER
12.00		602.0	
13.00		603.0	
14.00		604.0	
15.00		605.0	
16.00		606.0	
17.00		607.0	
18.00		608.0	
19.00		609.0	
20.00		610.0	
21.00		611.0	
22.00		612.0	
23.00		613.0	
24.00		614.0	
25.00		615.0	
25.50		615.5	
26.00		616.0	
26.50		616.5	
27.00		617.0	
27.50		617.5	
28.00		618.0	
28.50		618.5	
29.00		619.0	
29.50		619.5	
30.00		620.0	
30.50		620.5	
31.00		621.0	
31.50		621.5	
32.00		622.0	
32.50		622.5	
33.00		623.0	
33.50		623.5	
34.00		624.0	
34.50		624.5	
35.00		625.0	
35.50		625.5	
36.00		626.0	
36.50		626.5	

FLOOD ELEVATION PREDICTIONS (PAGE 2)			
AVERAGE OF WILLOW ISLAND UPPER GAGE & HANNIBAL LOWER GAGE	AVERAGE OF WILLOW ISLAND LOWER GAGE & HANNIBAL LOWER GAGE	PROJECTED LEVEL @ PLANT AVERAGING W.I. UPPER & HANN. LOWER	PROJECTED LEVEL @ PLANT AVERAGING W.I. LOWER & HANN. LOWER
	37.00		627.0
	37.50		627.5
	38.00		628.0
	38.50		628.5
	39.00		629.0
	39.50		629.5
	40.00		630.0
	40.50		630.5
	41.00		631.0
	41.50		631.5
	42.00		632.0
	42.50		632.5
	43.00		633.0
	43.50		633.5
	44.00		634.0
	44.50		634.5
	45.00		635.0
	45.50		635.5
	46.00		636.0
	46.50		636.5
	47.00		637.0
	47.50		637.5
	48.00		638.0
	48.50		638.5
	49.00		639.0
	49.50		639.5
	50.00		640.0
	50.50		640.5
	51.00		641.0
	51.50		641.5
	52.00		642.0

Ohio River Gage Elevation Chart for Outfall 001

Gage Reading (feet)	Ohio River Elevation	Gage Reading (feet)	Ohio River Elevation
0.0	601.32	5.0	606.32
0.1	601.42	5.1	606.42
0.2	601.52	5.2	606.52
0.3	601.62	5.3	606.62
0.4	601.72	5.4	606.72
0.5	601.82	5.5	606.82
0.6	601.92	5.6	606.92
0.7	602.02	5.7	607.02
0.8	602.12	5.8	607.12
0.9	602.22	5.9	607.22
1.0	602.32	6.0	607.32
1.1	602.42	6.1	607.42
1.2	602.52	6.2	607.52
1.3	602.62	6.3	607.62
1.4	602.72	6.4	607.72
1.5	602.82	6.5	607.82
1.6	602.92	6.6	607.92
1.7	603.02	6.7	608.02
1.8	603.12	6.8	608.12
1.9	603.22	6.9	608.22
2.0	603.32	7.0	608.32
2.1	603.42	7.1	608.42
2.2	603.52	7.2	608.52
2.3	603.62	7.3	608.62
2.4	603.72	7.4	608.72
2.5	603.82	7.5	608.82
2.6	603.92	7.6	608.92
2.7	604.02	7.7	609.02
2.8	604.12	7.8	609.12
2.9	604.22	7.9	609.22
3.0	604.32	8.0	609.32
3.1	604.42	8.1	609.42
3.2	604.52	8.2	609.52
3.3	604.62	8.3	609.62
3.4	604.72	8.4	609.72
3.5	604.82	8.5	609.82
3.6	604.92	8.6	609.92
3.7	605.02	8.7	610.02
3.8	605.12	8.8	610.12
3.9	605.22	8.9	610.22
4.0	605.32	9.0	610.32
4.1	605.42	9.1	610.42
4.2	605.52	9.2	610.52
4.3	605.62	9.3	610.62
4.4	605.72	9.4	610.72
4.5	605.82	9.5	610.82
4.6	605.92	9.6	610.92
4.7	606.02	9.7	611.02
4.8	606.12	9.8	611.12
4.9	606.22	9.9	611.22
5.0	606.32	10.0	611.32

Gauge Elevation Chart for Sugar Camp Run

Gauge Reading (feet)	Ohio River Elevation	Gauge Reading (feet)	Ohio River Elevation
0.0	613.92	5.3	619.22
0.1	614.02	5.4	619.32
0.2	614.12	5.5	619.42
0.3	614.22	5.6	619.52
0.4	614.32	5.7	619.62
0.5	614.42	5.8	619.72
0.6	614.52	5.9	619.82
0.7	614.62	6.0	619.92
0.8	614.72	6.1	620.02
0.9	614.82	6.2	620.12
1.0	614.92	6.3	620.22
1.1	615.02	6.4	620.32
1.2	615.12	6.5	620.42
1.3	615.22	6.6	620.52
1.4	615.32	6.7	620.62
1.5	615.42	6.8	620.72
1.6	615.52	6.9	620.82
1.7	615.62	7.0	620.92
1.8	615.72	7.1	621.02
1.9	615.82	7.2	621.12
2.0	615.92	7.3	621.22
2.1	616.02	7.4	621.32
2.2	616.12	7.5	621.42
2.3	616.22	7.6	621.52
2.4	616.32	7.7	621.62
2.5	616.42	7.8	621.72
2.6	616.52	7.9	621.82
2.7	616.62	8.0	621.92
2.8	616.72	8.1	622.02
2.9	616.82	8.2	622.12
3.0	616.92	8.3	622.22
3.1	617.02	8.4	622.32
3.2	617.12	8.5	622.42
3.3	617.22	8.6	622.52
3.4	617.32	8.7	622.62
3.5	617.42	8.8	622.72
3.6	617.52	8.9	622.82
3.7	617.62	9.0	622.92
3.8	617.72	9.1	623.02
3.9	617.82	9.2	623.12
4.0	617.92	9.3	623.22
4.1	618.02	9.4	623.32
4.2	618.12	9.5	623.42
4.3	618.22	9.6	623.52
4.4	618.32	9.7	623.62
4.5	618.42	9.8	623.72
4.6	618.52	9.9	623.82
4.7	618.62	10.0	623.92
4.8	618.72	10.1	624.02
4.9	618.82	10.2	624.12
5.0	618.92	10.3	624.22
5.1	619.02	10.4	624.32
5.2	619.12	10.5	624.42

Gauge Elevation Chart for Sugar Camp Run

Gauge Reading (feet)	Ohio River Elevation	Gauge Reading (feet)	Ohio River Elevation
10.6	624.52	13.5	627.52
10.7	624.62	13.6	627.62
10.8	624.72	13.7	627.72
10.9	624.82	13.8	627.82
11.0	624.92	13.9	627.92
11.1	625.02	14.0	628.02
11.2	625.12	14.1	628.12
11.3	625.22	14.2	628.22
11.4	625.32	14.3	628.32
11.5	625.42	14.5	628.42
11.6	625.52	14.6	628.52
11.7	625.62	14.7	628.62
11.7	625.72	14.8	628.72
11.8	625.82	14.9	628.82
11.9	625.92	15.0	628.92
12.0	626.02	15.1	629.02
12.1	626.12	15.2	629.12
12.2	626.22	15.3	629.22
12.3	626.32	15.4	629.32
12.4	626.42	15.5	629.42
12.5	626.52	15.6	629.52
12.6	626.62	15.7	629.62
12.7	626.72	15.8	629.72
12.8	626.82	15.9	629.82
12.9	626.92	16.0	629.92
13.0	627.02	16.1	630.02
13.1	627.12	16.2	630.12
13.2	627.22	16.3	630.22
13.3	627.32	16.4	630.32
13.4	627.42	16.5	630.42
		16.6	630.52

ATTACHMENT 5 – CLOSURE PLAN

GENERAL DISCUSSIONS

The closure plans for the RCRA Units at this facility identify all setups that will be necessary to partially close and to completely close the hazardous waste management facilities at the Sistersville Plant. The plans themselves are contained later in this section. Plans are kept at the facility in the Environmental Protection Control Building. The post-closure plans are provided for units that may or will require post-closure care.

A post-closure plan was submitted and approved by the WVDEP for the No. 1 Surface Impoundment/Landfill on 8/24/92 via Part B Modification #001.

Contingency closure/post-closure plans are included for all hazardous waste surface impoundments in the event that a decision is made not to remove all the contaminated soil beneath the liners. These plans address, in general, the actions necessary to close and provide post-closure care as a disposal facility.

Table 1: Facilities Covered by Closure Plans and Maximum Waste Inventories

Key Number	Name of Operation	Type of Operation	Waste Inventories
1	No. 2 Landfill	Disposal	623,000 cubic yards
15	Kiln Incinerator	Treatment	n/a
36, 7, 8, and 9	Tanks. 768, 769, 873, 874; Waste Solvent Tanks	Storage	40,000 Gal. (Total)
12	Hydrolysis Reactor R-72	Treatment	2,000 Gal.
4	RCRA Drum Storage Pad #2	Storage	176,000 Gal.
8, 10, 13 and 11, 14	Diversion Basin/Equalization Basin	Storage/Treatment	2,200,000 Gal.
3	RCRA Hazardous Waste Drums Covered Storage Area	Storage	45,000 Gal.
5	RCRA Hazardous Waste Drums Uncovered Storage	Storage	45,000 Gal.
2	Sample Bottles in Can Area	Storage	3,200 Gal.

CLOSURE PLANS

No. 2 Landfill (Key #1)

General Description

This landfill has a surface area of approximately 13.5 acres and a storage capacity of 623,000 cubic yards. The landfill side of the dam has a 4-foot thick sand filter over 19 feet of impervious clay. The bottom and other sides of the unit have, from top to bottom:

1. One foot sand (over bottom half of unit for a drainage system)
2. Three feet of clay (minimum) covered partially with 60 mil or 100 mil high density polyethylene (HDPE) liner
3. One foot of sand
4. In-place clay

The drainage (leachate) from the dam, sidewalls, and bottom sand layers is routed into manholes located at the toe of the landfill dam. This drainage flows to the plant's WWTU for treatment and disposal.

Two surface water diversion ditches prevent surface runoff from the hillsides from entering the landfill. The runoff is directed to Sugar Camp run.

There is no RCRA regulated storage or treatment facilities located at the No. 2 Landfill to handle wastes prior to disposal. There is a temporary storage area for containerized and non-containerized solid waste prior to its disposal.

A chain-link fence with locked gates and warning signs surround the landfill to prevent unauthorized entry.

Expected Closure Date

Projected fill rates indicate closure will not commence before the year 2030. The facility will comply with the notification requirements of Subpart G of 40 CFR 264.

Equipment

- Floating Pump Platform
- Submersible Flygt Pump

Description of Closure

A detailed closure plan and drawings by a consulting engineer will be submitted to the agency for approval approximately one year before anticipated closure is necessary. At that time, all requirements for closure details will be addressed. For this application, the following closure description is offered as the anticipated plan.

The facility will be capped and sealed with a composite liner, which will include a lower blanket of clay placed atop the waste, random cohesive fill, and a high-density polyethylene liner placed immediately over the fill. The HDPE liner cap will be continuously welded to the existing liner around the perimeter of the basin to encapsulate the waste material. The liner will be sloped to the perimeter of the facility with a minimum slope of 3% and will be covered with 12 inches of bank run sand and 6 inches of topsoil. The topsoil will be seeded immediately after construction. The clay blanket will be constructed with the minimum thickness of 24 inches. However, random fill thickness will vary from 24 to 0 inches to provide the 3% surface slope as planned.

It is anticipated that a gas venting system will also be installed in the final cap. The number and location of these vents will be determined when the detailed design for closure is completed at the time of closure.

Closure Considerations

Items considered in the design of the cap included the presence of free liquids, bearing capacity of the waste, maintenance, drainage and erosion, seepage, frost protection, and settlement. A specific discussion of these items is presented below.

Free Liquids: The facility has been operated in a dry manner since 1987. Waste disposed of in the landfill since 1987 primarily consists of dewatered sludge, which will pass the paint filter test. Rainwater, which accumulates in the flight pump areas as direct runoff, or as seepage through the waste prior to closure, will be removed by pumping to the onsite wastewater treatment system.

Bearing Capacity and Settlement: Based on the manner, in which the disposal facility will be operated and filled, we anticipate bearing capacity will not be a problem. The waste should provide an ultimate bearing capacity, which exceeds that required to support the cap. The waste surface will be inspected and tested

A baseline will be established along the center of the cap immediately after closure is completed for future reference. Cross-sections will be developed along the baseline at 100-foot intervals also immediately after closure is completed. Additional baseline/cross-section surveys will be performed at one-year intervals for the first two years after closure and 5 year intervals thereafter throughout the post closure period. These sections will be compared to the original cross-sections to verify significant settlements have not occurred and the surface of the cap possesses adequate drainage.

Borrow Materials

Clay and random borrow materials will be obtained from onsite sources which are known to contain clay of sufficient quality. All fill will be replaced in maximum nine-inch loose lifts and will be compared to a minimum density of 95% of the maximum dry density as determined by the standard Proctor laboratory test per the American Society of Testing and Materials (ASTM) D698. The moisture content of the fill materials will be adjusted to within plus or minus 2% of the optimum moisture value.

Quality Assurance

A quality assurance plan will be prepared and incorporated with the Design Drawings and Specifications for closure to insure the adequacy of the synthetic liner materials and welds, soil borrow materials and compaction, and the cap slope. The plan will at a minimum address:

- 1) Quality assurance personnel and responsibilities
- 2) Synthetic liner materials and placement
- 3) Synthetic liner welds
- 4) Clay liner and random fill materials, placement and compaction
- 5) Bearing capacity of the waste
- 6) Contingencies for bearing capacity and settlement problems
- 7) Construction stakeout and control to assure the 3% cap slope is constructed as planned. The construction stakeout and control measure will include:
 - a) use of electronic survey instruments
 - b) 50-foot stakeout grid with daily grade checks by a qualified survey crew during final grading operations

Groundwater Monitoring

The groundwater monitoring system for the No. 2 Landfill consists of two up-gradient wells (106-1 and L-5)

and thirteen (13) down-gradient wells (100-A, 37, 38, 39, 40, 41, 42, 43, L-4, L-6, L-7, L-8, and L-9). Note Well #42 is normally dry. The L-series wells are used for LNAPL monitoring only. These wells are part of the plant wide groundwater monitoring system. Groundwater will be monitored semi-annually and is described in more detail in Module IX of the permit.

Leachate Collection and Treatment

The existing leachate collection system will be used during the post-closure period. The total leachate flow from this unit is approximately 4 gallons per minute including flow from the rock underdrain and the flow of leachate from the No. 1 Landfill. Leachate flows by gravity to the plant's WWTU for treatment prior to discharge to the Ohio River.

Preventative maintenance is expected to be conducted on the leachate collection manholes and associated lines. This will consist mainly of cleaning residues out of the manholes and lines. These needs will be addressed under the unit's 30-year post-closure plan.

Minimization of Further Maintenance

Maintenance of cover will be minimized by:

- 1) Having surface runoff from the hillsides diverted from the cover by diversion ditches.
- 2) Providing a gentle slope that prevents both pooling of surface water and erosion due to rapid runoff.
- 3) Providing vegetation to lessen surface erosion.

Maintenance of the dam will be minimized by:

- 1) Directing surface runoff to the spillway to prevent overtopping of the dam.
- 2) Providing vegetation (native grass) to lessen surface erosion.

Maintenance of the landfill in general will be minimized by providing a fence with a locked gate to prevent disturbance of the facility by unauthorized persons.

Protection of Human Health and the Environment

Human health is protected by:

- 1) Providing a fence with a locked gate to prevent unauthorized entry
- 2) Venting gases generated by the decomposition of covered sludge to prevent gas formation underneath the clay cover.

Surface Water is protected by:

- 1) Diverting hillside runoff away from the landfill to help minimize disturbance or infiltration of the cap.
- 2) Providing a protective cover to separate run-on from the waste.
- 3) Treating the collected leachate at the plant's wastewater treatment unit prior to discharge in the Ohio River.

Groundwater is protected by:

- 1) Providing a cover that is impermeable and sloped to prevent the infiltration of run-on.
- 2) Providing a leachate collection/removal system.
- 3) Operating a groundwater monitoring system to monitor potential contamination of underlying aquifers.

Releases of material to the air are minimized by the clay cap that prevents wind dispersion of waste material.

Kiln Incinerator (Key #15)

Major Equipment:

- Rotary Kiln
- Secondary combustion chamber
- Water quencher
- Packed scrubber
- Electrostatic wet scrubber trains (two units in parallel)
- Induced draft fan (2 units)
- Exhaust stack
- Emergency exhaust vent
- Pumps (11 units)
- Ash hopper

Expected Closure Date: December 31, 2020 or later

The Sistersville Plant will comply with notification requirements of Subpart G of 40 CFR 264.

<u>ie (day)</u>	<u>Activities</u>
0	No more wastes received.
60	Haul ash to a waste disposal landfill. Flush all lines from liquid waste storage tanks (Tks. 768, 769, 873, 874) leading to kiln incinerator with water. Flush both electrostatic wet scrubber trains and the packed scrubber with water. Drain wastewater from above steps to process sewer. Flush rotary kiln, ash hopper and secondary combustion chamber with water. Flush kiln quench system with water. Water flush the induced draft fans, exhaust stack, and emergency vent. Flush the concrete pads will be flushed with water. Collect wash water and dispose in the plant wastewater treatment facility. Remove packing from the countercurrent packed scrubber. Water wash the packing and reuse or dispose of in a hazardous waste disposal facility. Flush the scrubber with water for reuse.
90	Submit certification of closure.

Minimization of Further Maintenance:

Further maintenance will be eliminated since the incinerator will have taken out of service and decontaminated.

Protection of Human Health and Environment:

Protection will be provided since no hazardous waste or hazardous waste residues will be present when closure is completed.

Equipment Decontamination:

All equipment needing to be cleaned will be decontaminated by water flushing. Following flushing the equipment will be visually inspected to determine if further cleaning is necessary. If further cleaning is necessary one or more of the following methods will be used:

- 1) Solvent/water flushing
- 2) Steam cleaning
- 3) Hydroblasting
- 4) Sandblasting

In the extreme case, contaminated portions of equipment would be disassembled and disposed of in an approved hazardous waste land disposal unit.

Wash water will be contained and collected to avoid contamination of surrounding ground. Portable pumps and a vacuum truck will be used to transport the wash water to the plant's wastewater treatment unit.

Both the Plant's and the contractor's equipment will be used to decontaminate this unit.

Waste Solvent Tanks 768, 769, 873, and 874 (Key #6, 7, 8, & 9)

Major Equipment:

- Tanks (4 units)
- Pumps (5 units)

Expected Closure Date: December 31, 2020 or later

The Sistersville Plant will comply with notification requirements of Subpart G of 40 CFR 264.

<u>Time (day)</u>	<u>Activities</u>
0	No more wastes received.
30	All waste transported offsite for disposal.
90	Flush all tanks, pumps, and associated inlet and outlet lines and valves with toluene. Send toluene flush Kiln Incinerator. Purge all tanks, pumps, lines and valves with nitrogen. Clean the tank confinement structure (concrete dike) with high-pressure water.
120	Treat all wastewater generated in the plant wastewater treatment facility. Submit certification of closure.

Minimization of Further Maintenance

Further maintenance will be eliminated since the tanks will have been taken out of service and decontaminated.

Protection of Human Health and Environment

Protection will be provided since no hazardous waste or hazardous waste residues will be present when closure is completed.

Equipment Decontamination

These tanks are used to store waste solvents- toluene, methanol, and ethanol. The internals of all tanks, pumps, lines, and valves will be decontaminated by toluene flushing and nitrogen purging. Wastes generated will be burned in the incinerator. The discharge confinement structure (concrete dike) will be

decontaminated by flushing with water. Visual inspections will be used to determine the extent of cleaning necessary.

All equipment used to close this facility that contacted hazardous material will be appropriately cleaned, and all generated wastewater will be sent to the process sewer.

Hydrolysis Reactor-R72 (Key #12)

Major Equipment:

- Tank
- Mixer
- Vent Scrubber
- Vent Stack

Expected Closure Date: December 31, 2020 or later

The Sistersville Plant will comply with notification requirements of Subpart G of 40 CFR 264.

<u>Time (day)</u>	<u>Activities</u>
0	No more wastes received.
30	Nitrogen purge associated inlet and outlet lines and valves. Send purged waste to hydrolysis tank.
45	Empty tank to the process sewer system. Flush tank, mixer, vent scrubber, lines and valves with water. Hose down exterior equipment surfaces, support structures and discharge confinement structure (curbed, concrete pad). Send all wastewater generated to the process sewer.
60	Submit certification of closure.

Minimization of Further Maintenance

Further maintenance will be eliminated since the reactor will have been taken out of service and decontaminated.

Protection of Human Health and Environment

Protection will be provided since no hazardous waste or hazardous waste residues will be present when closure is completed.

Equipment Decontamination

The tank is used to hydrolyze characteristic ignitable and reactive hazardous wastes. The associated inlet and outlet lines and valves are first purged with nitrogen and then the tank, mixer, vent scrubber, lines and valves are flushed with water. The exterior equipment surfaces, support structures, and discharge confinement structure will be decontaminated by flushing with water. The tank agitator, vent blower, scrubber and stack will be re-used in other applications. The tank will either be re-used or scrapped for steel value. All equipment used to close this facility that contacted hazardous material will be appropriately cleaned, and all generated wastewater will be sent to the process sewer. Visual inspections will be used to determine the extent of cleaning necessary.

RCRA Drum Storage Pad #2 (Key #4)

Expected Closure Date: December 31, 2020 or later

The Sistersville Plant will comply with notification requirements of Subpart G of 40 CFR 264.

<u>Time (day)</u>	<u>Activities</u>
0	No more drums received.
60	Send empty drums off site for disposal. Dispose of full drums at the kiln incinerator, store at an alternate unit, or transfer offsite for disposal.
70	Flush concrete storage pad with water.
	Treat wash water in the plant's wastewater treatment unit.
120	Submit certificate of closure.

Minimization of Further Maintenance

Further maintenance will be eliminated since the waste drums will have been taken out of service and decontaminated or sent off site for disposal.

Protection of Human Health and Environment

Protection will be provided since no hazardous waste or hazardous waste residues will be present when closure is completed.

Equipment Decontamination

The drums will be sent off site for disposal.

All equipment used to close this facility that contacted hazardous material will be appropriately cleaned and all generated wastewater will be sent to the process sewer.

This plan is being submitted as required under Title 40 CFR 270.14(b)(13) in accordance with Part 264, Subpart G of Subchapter I.

Diversion Basin/Equalization Basin (Key #10, 11, 13, 14)

Major Equipment:

- Floating platform
- Sluice gate and access platform (2 units)
- Pumps (3 units)
- Concrete divider wall
- Agitator

Expected Closure Date: December 31, 2020 or later

The Sistersville Plant will comply with notification requirements of Subpart G of 40 CFR 264.

<u>Time (day)</u>	<u>Activities</u>
0	No more wastes received from plant sewer.
10	Pump wastewater from the impoundment to the wastewater treatment unit. Remove, dewater, and dispose of sludge in an approved facility.

- 30 Flush effluent pumps and associated lines and valves with water.
Drain generated wastewater to the process sewer.
Dismantle pumps and lines.
Wash floating platform and agitator with water for reuse.
- 60 Dredge synthetic and clay liner.
Dispose of material in an approved facility.
- 120 Sample soil in pond walls and floor and analyze for Total Organic Carbon (TOC).
Compare the TOC values with samples from unaffected nearby soils.
Because many of the constituents in the wastewater system are carbon based, the TOC provides an indication of potential contamination below the impoundment floor.
Conduct more detailed analyses to identify the contaminants.
Complete sampling and analysis to determine the extent of soil contamination.
- 150 Remove of underlying soil that is contaminated.
Dispose of soil in an approved facility.
- 160 Submit certification of closure.

Minimization of Further Maintenance

Further maintenance will be eliminated since the Diversion Basin/Equalization basin will have been taken out of service and decontaminated.

Protection of Human Health and Environment

Protection will be provided since no hazardous waste or hazardous waste residues will be present when closure is completed.

Equipment Decontamination

The pumps, agitator, floating platform, associated lines and valves, and the canal gate will be flushed with water and reused. The closure equipment (crane, dump truck, and tractors) will also be cleaned with high-pressure water. Visual inspections will determine the extent of cleaning necessary. All generated wastewater will be treated in the plant wastewater treatment unit. All cleaning will be supervised by Plant personnel.

The cement divider wall (approximately 200 yd³) will be cleaned with high-pressure water and left in place for stable fill.

Any residues or soils contaminated with hazardous wastes that are generated during equipment decontamination will be disposed of in approved facility. The quantity of residues generated during cleaning will be minimized.

This plan is being submitted as required under Title 40 CFR 270.14(b)(13) in accordance with Part 264, Subpart G of Subchapter I.

Waste Solvent Tank 452

The tank was closed in accordance with the permit and removed from service in October 2015.

RCRA Hazardous Waste Drum Covered Storage Area (Key #103)

Expected Closure Date: December 31, 2020 or later

The Sistersville Plant will comply with notification requirements of Subpart G of 40 CFR 264.

<u>Time (day)</u>	<u>Activities</u>
0	No more waste drums received.
60	Reduce inventory of drums by any of the following methods. <ul style="list-style-type: none">• Dispose of contents in the kiln incinerator• Transfer drums offsite for disposal• Store at an alternative storage site• Empty drums into an approved landfill Send empty drums off-site for disposal.
65	Flush storage pad thoroughly with water. Send wastewater to the process sewer.
120	Submit certification of closure.

Minimization of Further Maintenance

Further maintenance will be eliminated since the pad will have been taken out of service and decontaminated.

Protection of Human Health and Environment

Protection will be provided since no hazardous waste or hazardous waste residues will be present when closure is completed.

Equipment Decontamination

All equipment used to close this facility that contacted hazardous material will be appropriately cleaned and all generated wastewater will be sent to the process sewer. High-pressure water will be used to clean the concrete pad. Visual inspection will be used to assess the decontamination of the pad.

This plan is being submitted as required under Title 40 CFR 270.14(b) (13) in accordance with Part 264, Subpart G of Subchapter I.

RCRA Hazardous Waste Drum Uncovered Storage Area (Key #115)

Expected Closure Date: December 31, 2020 or later

The Sistersville Plant will comply with notification requirements of Subpart G of 40 CFR 264.

<u>Time (day)</u>	<u>Activities</u>
0	No more waste drums received.
60	Reduce inventory of drums by any of the following methods. <ul style="list-style-type: none">• Dispose of contents in the kiln incinerator• Transfer drums offsite for disposal• Store at an alternative storage site• Empty drums into an approved landfill Send empty drums off-site for disposal.
65	Flush storage pad thoroughly with water. Send wastewater to the process sewer.
120	Submit certification of closure.

Minimization of Further Maintenance

Further maintenance will be eliminated since the pad will have been taken out of service and

decontaminated.

Minimization of Further Maintenance

Further maintenance will be eliminated since the pad will have been taken out of service and decontaminated.

Protection of Human Health and Environment

Protection will be provided since no hazardous waste or hazardous waste residues will be present when closure is completed.

Equipment Decontamination

All equipment used to close this facility that contacted hazardous material will be appropriately cleaned and all generated wastewater will be sent to the process sewer. High-pressure water will be used to clean the concrete pad. Visual inspection will be used to assess the decontamination of the pad.

This plan is being submitted as required under Title 40 CFR 270.14(b) (13) in accordance with Part 264, Subpart G of Subchapter I.

Sample Bottles in Cans Storage Area (Key #112)

Expected Closure Date: December 31, 2020 or later

The Sistersville Plant will comply with notification requirements of Subpart G of 40 CFR 264.

<u>Time (day)</u>	<u>Activities</u>
0	No more hazardous waste in cans received.
30	Dispose of cans in the kiln incinerator, transfer offsite for disposal, or store at an alternate location.
40	Flush concrete storage pad with water.
	Send wastewater to process sewer.
120	Submit certification of closure.

Minimization of Further Maintenance

Further maintenance will be eliminated since the facility will have been taken out of service and decontaminated.

Protection of Human Health and Environment

Protection will be provided since no hazardous waste or hazardous waste residues will be present when closure is completed.

Equipment Decontamination

All equipment used to close this facility that contacted hazardous material will be appropriately cleaned and all generated wastewater will be sent to the process sewer.

This plan is being submitted as required under Title 40 CFR 270.14(b)(13) in accordance with Part 264, Subpart G of Subchapter I.

POST-CLOSURE PLAN

TABLE 2 FACILITIES COVERED BY POST-CLOSURE PLANS

Key Number	Name of Facilities	Amount of Wastes Disposed
1	No. 2 Landfill	623,000 cubic yards
8	Diversion Basin/Equalization Basin	Empty at closure

No. 2 Landfill (Key #1)

Maintenance Activities

Inspections

Plant personnel will inspect the entire facility every three months. This includes the groundwater monitoring wells (external condition), dam, cover, gas vents, spillway, diversion ditches, leachate drains, and collection manhole, roadway, fence, signs, and gate. In addition, all drainage structures will be inspected after heavy rainfall (3 inches or more in a 24-hour period) and will be maintained as long as necessary. Any deficiencies will be recorded and repaired as necessary.

Inspection of the cover and dam will include checking for erosion damage. Location and severity of any noted erosion will be recorded on inspection sheets and the corrective action will be also be included on these sheets. Corrective action will typically include regrading and/or addition of the appropriate fill material and reseeding. Each case of erosion will be evaluated on an individual basis as to urgency and type of repair.

Scheduled Maintenance

Brush and weed control – the cover will be moved once per year. Brush and weed growth on the side of the dam will be appropriately controlled once per year.

Fertilizing – the cover will be fertilized (where needed) once per year for three years. At the end of three years, the cover and dam will be fertilized (where needed) at least once every five years.

Reseeding and mulching – the cover will be reseeded and mulched (where needed) once per year for the first three years. This activity will continue if required. The dam will be taken care of where and when needed.

Diversion ditches and spillway – these structures will be cleaned of debris and repaired (where needed) at least once every five years. Any blockage, overtopping or scouring will be repaired as detected when such condition is discovered.

Leachate manhole and drains – the manhole and drains will be cleaned out if needed at least once every five years unless circumstances require more frequent maintenance.

Unscheduled Maintenance

When circumstances require maintenance activities above those that are scheduled, such activities will be performed in an expeditious manner dependent upon severity of problem and weather conditions. Such activities will maintain the integrity of the facility and monitoring equipment.

Surveying

A baseline will be established through the center of the cap immediately after closure is completed for future reference. Cross-section surveys will be developed through the baseline at 100-foot intervals. Additional baseline cross-section surveys will be performed at 1-year intervals for the first 2 years after closure and 5-year intervals thereafter, throughout the post-closure period. These sections will be compared to the original cross-sections to verify that significant settlements have not occurred and the surface of the cap has the adequate slope for drainage. If settlement of the cover causes any low area where water ponds, the area will be corrected by placement of additional cap components to maintain drainage. All new fill areas will be immediately seeded and mulched.

Monitoring Activities

Groundwater

The groundwater monitoring system for the No. 2 Landfill consists of two up-gradient wells (106-1 and L-5) and thirteen (13) down-gradient wells (100-A, 37, 38, 39, 40, 41, 42, 43, L-4, L-6, L-7, L-8, L-9). Note that well #42 is normally dry. The L-series wells are used for LNAPL monitoring only. Groundwater will be monitored semi-annually and is described in more detail in module IX of this permit.

Leachate

Leachate drains will be sampled at each leachate collection manhole once per year. Samples will be analyzed for 5-day biological demand, total organic carbon, pH, total organic halogens, and specific conductance. The flow rates will also be measured. Sampling will continue for the entire post-closure period until leachate is no longer detected. Past analyses indicate that the leachate currently has virtually no detectable Appendix IX constituents.

The combined leachate from the No. 1 and No. 2 landfills will flow into a catch basin equipped with a pump automatically activated by level switches. The leachate will be pumped to a one train, two stage activated carbon treatment system. The flow will first pass through a prefilter to remove suspended solids and prevent fouling of the carbon filters. The proposed carbon treatment may consist of two Aqua 500 HP Liquid Phase Absorbers plumbed in a parallel configuration (or similar equipment). Each carbon unit will contain 500 to 600 pounds of activated carbon. Based on the existing leachate flow of 4 to 5 gallons per minute; the carbon unit is expected to last a minimum of 3 months between change-out's. It is likely each carbon unit will last longer between replacement. For the purposes of the post-closure cost estimate calculations in Section I-7, a replacement schedule of six months has been used. Table I-11 includes estimated annual operational and maintenance costs for the carbon treatment system.

Upon discharge from the carbon treatment unit leachate flow will join flow from the copper pond groundwater recovery well and be piped to the WWTU for solids settlement, equalization, and pH adjustment, if needed. The effluent from the WWTU will be discharged under the facility's NPDES permit that will be maintained under the provisions of the Clean Water Act.

Gas

If warranted (odors, etc.) the individual gas vents can be monitored at the landfill. Monitoring would consist of measuring the total organic concentration at the openings of the vent pipes. The monitoring would be performed by plant personnel using portable detection devices. Samples may also be collected for analysis by the Sistersville Plant Laboratory.

Record Keeping and Reporting

Records of all monitoring activities will be kept at the plant throughout the post-closure period.

Equalization Basin/Diversion Basin (Key #10, 11, 13 and 14)

It is expected that the Equalization Basin/Diversions Basin will be clean closed and no further post closure care will be needed. If the facility is not clean closed the following maintenance activities will be conducted.

Maintenance Activities

Inspections

Plant personnel will inspect the cover of the closed area annually. Any deficiencies will be recorded and repaired as necessary.

Inspection of the cover includes checking for erosion damage. Location and severity of any erosion will be recorded on inspection sheets and the corrective action taken will also be included on these sheets. Corrective action will typically include regrading and/or addition of the appropriate fill material and reseeding. Each case of erosion will be evaluated on an individual basis as to urgency and type of repair.

Scheduled Maintenance

Brush and weed control – the cover will be mowed once per year.

Fertilizing – the cover will be refertilized (where needed) once per year for three years. At the end of three years, the cover will be refertilized (where needed) at least once every five years.

Reseeding and mulching – the cover will be reseeded and mulched (where needed) once per year for the first three years. This activity will continue if required.

Unscheduled Maintenance

When circumstances require maintenance activities above those that are scheduled, such activities will be performed in an expeditious manner dependent upon severity of problem and weather conditions. Such activities will maintain the integrity of the facility.

NOTICE IN DEED

As required by Section WV Hazardous Waste Regulations 33 CSR 20-12.1, a notice has been placed in the deed of Sistersville Plant's property that this land has been used to manage hazardous waste.

CLOSURE COST ESTIMATE

The cost estimates are described for each facility. The total cost estimate for hazardous waste facilities closure is the sum of the individual facility estimates. Only one cost value is used for the two storage impoundments described in this section and that is the contingent closure/post-closure cost.

Closure costs for this facility's RCRA units are updated annually using the annual Implicit Price Deflator for Gross National Product as published by the U.S. Department of Commerce in its Survey of Current Business.

All closure cost estimates presented were prepared based on labor, material, and equipment being provided by a third-party contractor. The dates of the estimates are indicated for each unit and typically are those from the 1988 application, which were based on 1981 estimates. The costs have been revised annually since the basis year using the appropriate multiplier since the original estimates.

FINANCIAL ASSURANCE MECHANISM FOR CLOSURE

The Sistersville Plant as part of MPM Silicones, LLC has provided a copy of the Stand-by Trust Agreement in compliance with the requirement for demonstrating financial assurance for closure and post-closure care.

POST-CLOSURE COST ESTIMATES

The Post-closure estimates are provided in the same format as closure estimates. Post-closure estimates for this facility's RCRA units are updated annually using the annual Implicit Price Deflator for Gross National Product as published by the U.S. Department of Commerce in its Survey of Current Business. All post-closure cost estimates were prepared based on labor, material and equipment being provided by a third party contractor and cover a 30-year post-closure period.

FINANCIAL ASSURANCE MECHANISM FOR POST-CLOSURE

The Sistersville Plant as part of MPM Silicones, LLC has provided a Stand-by Trust Agreement to demonstrate compliance with the requirements for financial assurance for closure and post-closure care.

LIABILITY REQUIREMENTS

The Sistersville Plant as part of MPM Silicones, LLC has provided an irrevocable letter of credit for liability coverage for sudden and non-sudden occurrences with an annual aggregate of eight (8) million dollars.

STATE ASSUMPTION OF LIABILITY

The Sistersville Plant will not request state assumption of legal or financial responsibilities.

Post-Closure Inspection Plans

The following are post-closure inspection plans for the No. 2 Landfill. Similar plans will be used for the other units at this facility that require post-closure care.

Each inspection will log the following information on an inspection sheet:

- 1) Date
- 2) Inspectors Name and Locations
- 3) Observations
- 4) Necessary Repairs
- 5) Date Repairs Completed
- 6) Comments

Following are the frequencies at which each inspection will be done:

TABLE 3: POST CLOSURE INSPECTION FREQUENCY

	Monthly	Quarterly	Annually
Security Controls	n/a	Years 1-30	n/a
Erosion Damage	Years 1-2	Years 3-30	n/a
Cover Settlement, Subsidence and Displacement	Years 1-5	Years 6-30	n/a
Vegetative Cover Condition	n/a	n/a	Years 1-30
Integrity of Run-on and Runoff Controls	n/a	Years 1-30	n/a
Cover Drainage System	Years 1-2	Years 3-30	n/a

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Gas Venting System	n/a	Years 1-30	n/a
Well Condition	n/a	n/a	Years 1-30

ATTACHMENT 6 – PROCEDURES FOR HANDLING IGNITABLE, REACTIVE, AND INCOMPATIBLE WASTES

GENERAL

There are specific plant safety policies, which are strictly followed, that are designed to prevent ignition or reaction of any ignitable or reactive materials including wastes, raw materials, or products. These general policies are in the Plant Safety and Health Procedures and include items such as Hot Work Permits, "No Smoking" signs, and Plant Electrical Classification.

In addition, the plant has procedures and guidelines for handling flammable and combustible materials. These procedures apply to dumpsters and drums containing combustible or flammable materials (including wastes). A procedure for testing compatibility of drummed materials prior to mixing them for disposal is also followed.

CONTAINER STORAGE

Permitted container storage areas are located at least 15 meters from the facility's property line. Incompatible wastes are stored separate from each other to avoid contact.

TANK STORAGE

T-768 and T-769

T-768 and T-769 have inert gas blankets (nitrogen) on their vapor spaces. These tanks are protected by a manually operated sprinkler system. The minimum distance between these tanks is 66 inches. The nearest important building on the plant property is located over 75 ft. from these tanks and the plant fence line is over 200 yards away. Buffer zone requirements, as contained in Table 2-2 of the NFPA's *Flammable and Combustible Liquids Code*, are met.

Incompatible wastes are not placed in these tanks. T-768, T-769 and T-874 are dedicated to transfers from "less than 90 day" plant waste solvent storage tanks. When waste needs to be transferred to T-768, T-769, or T-874 from "less than 90 day" tanks, the production unit has the waste checked for pH, water, total solvents, chloride, silanic hydrogen, and nonvolatile residues. The EP Department is contacted and informed of the results. If the results are within acceptable range, the transfer is made. This procedure assures a compatible waste stream.

T-873

T-873 has an inert gas blanket (nitrogen) on the vapor space and it is protected by a manually operated sprinkler system. This tank is located in a tank farm with tanks T-768, T-769 and T-874. The minimum distance between these tanks is 66 inches. The nearest important building on the plant property is located over 75 ft. away and the plant fence line is over 200 yards away. Buffer zone requirements, as contained in Table 2-2 of the NFPA's *Flammable and Combustible Liquids Code* are met. T-873 accepts transfers only from one tank, which is hard piped. The Department reserves the tank for acid toluene and silane heavies. Incompatible wastes such as alcohols are transferred to other tankage for disposal.

T-874

T-874 has an inert gas blanket (nitrogen) on the vapor space and it is protected by a manually operated sprinkler system. This tank is located in a tank farm with tanks T-768, T-769 and T-873. The minimum distance between these tanks is 66 inches. The nearest important building on the plant property is located over 75 ft. away and the plant fence line is over 200 yards away. Buffer zone requirements, as contained in Table 2-2 of the NFPA's *Flammable and Combustible Liquids Code*, are met.

See T-768 and T-769 for information on the management of incompatible wastes.

SURFACE IMPOUNDMENT

Reactive and incompatible wastes are not placed in this impoundment. When ignitable wastes are placed in this impoundment, they are sufficiently mixed immediately after placement so that the resulting mixture no longer meets the definition of ignitable waste and 40 CFR 24.17(b) is complied with. Ignitable wastes placed in this impoundment will have less than 10% TOC. Also, when ignitable wastes are placed in this impoundment, they are handled so they are not exposed to materials or conditions that could cause them to ignite. This is accomplished by control of ignition sources through the use of Plant Hazardous Work Permits, Burning Permits, a "No Smoking" Policy within the plant, and following the Plant Electrical Classifications Plan.

LANDFILL

Ignitable, reactive, and incompatible wastes are not disposed in the landfill.

ATTACHMENT 7 – CONTAINMENT MANAGEMENT PRACTICES

Sample Bottles in Cans Storage Area (Key No. 2)

A concrete floor with steel reinforcing wire make up the base of this storage pad. Inspection of the containment system is conducted weekly including inspection for cracks and/or gaps in the base. All cracks or gaps are repaired within 14 days of discovery, weather permitting. No visible cracks are present in the base at the time of this application and the base is structurally sound and resistant to penetration (constructed per the facility's and ASTM specifications).

The base of this pad is sloped towards a drain located at its center. The pad drains through a line to the Diversion Basin. Five-gallon cans of waste are stored on this pad on 4' x 4' pallets to prevent contact of the containers with accumulated liquids should the drainage system fail.

Drainage from the Sample Bottles in Cans storage area goes directly to the Diversion Basin/Equalization Basin via a vitrified tile line. From there, liquids are pumped to the WWTU.

Containment system capacity is approximately 785 gallons. This would contain the volume of the largest container and it would contain 10% of the total volume of containers (3,440 gallons), which is 344 gallons.

Run-on is diverted to a catch basin located near the storage pad. Any run-on entering the pad would be handled by the pad catch basin.

RCRA Drum Storage Pad #2(Key No. 4)

A concrete floor with woven wire reinforcing make up the base of this storage pad. Inspection of the containment system is conducted weekly including inspection for cracks and/or gaps in the base. All cracks or gaps are repaired within 14 days of discovery, weather permitting. No visible cracks are present in the base at the time of this application and the base is structurally sound and resistant to penetration (constructed per the facility's and ASTM specifications).

The base is sloped towards a central collection trench that drains to the Diversion Basin (Key No. 11, 14). The trench is fitted with a slide gate so the pad can be fully contained should the need arise. Drums containing waste stored on this pad are placed on 4' x 4' pallets to prevent contact with accumulated liquids, should accumulation occur. Dumpsters and trailers are designed such that contact with accumulated liquids is prevented.

Drainage from the Waste Drum storage area goes to the Diversion Basin/Equalization Basin via an open trench. Liquids are then pumped to the WWTU. In the event of a spill, the trench is outfitted with a slide gate and can be closed to fully contain the spilled material for collection and disposal.

Containment system capacity is approximately 18,647 gallons. This would contain the volume of the largest container, a 6,000-gallon trailer, and it would contain 10% of the total volume of containers (20,000 gallons), which is 2,000 gallons plus freeboard.

A curb around the perimeter of the pad prevents run-on to this pad from the surrounding ground. Also, rainfall onto the pad is removed via the pads drainage trench.

RCRA HW Drum Covered Storage Pad (Key No. 3)

The base is constructed of concrete with woven wire reinforcement. Inspection of the containment system is conducted weekly including inspection for cracks and/or gaps in the base. All cracks or gaps are repaired within 14 days of discovery, weather permitting. No visible cracks are present in the base at the time of this application and the base is structurally sound and resistant to penetration. This pad is resistant to chemical penetration based on its engineering design in accordance with the facility and ASTM

specifications.

The base is sloped towards three catch basins that drain to the process sewer. Each catch basin has a valve on the drain line to catch spills or leaks from containers. Drums stored on this pad are placed on 4' x 4' wooden pallets to prevent contact with accumulated liquids. Dumpsters and trailers are designed such that contact with accumulated liquids is prevented.

Drainage from the RCRA Drum Storage area drains to the plant process sewer and WWTU. Three catch basins and one 6-inch vitrified tile line handle the drainage from this pad. This drainage line is fitted with a valve, which is maintained in a normally closed position. In the event of a spill, the spilled material can be collected for disposal.

Containment system capacity is approximately 4,974 gallons. This would contain the volume of the largest container (a 5,000-gallon trailer, 95% full) and it would contain 10% of the total volume of containers (36,300 gallons, assuming 660 55-gallon drums), which is 3,630 gallons.

Run-on to this pad is prevented by curbs and ditches. In addition, this drum storage pad has had a roof erected over the entire pad since it was first built and permitted. This roof additionally limits the amount of rainfall entering the pad. The pad's drain lines remove rainfall to the pad.

RCRA HW Drum Uncovered Storage Pad (Key No. 5)

The base is constructed of concrete with woven wire reinforcement. Inspection of the containment system is conducted weekly including inspection for cracks and/or gaps in the base. All cracks or gaps are repaired within 14 days of discovery, weather permitting. No visible cracks are present in the base at the time of this application and the base is structurally sound and resistant to penetration. This pad is resistant to chemical penetration based on its engineering design in accordance with the facility and ASTM specifications.

The base of this pad is sloped towards two catch basins that drain to the process sewer. Each catch basin has a valve on the drain line to catch spills or leaks from containers. Drums stored on this pad are placed on 4' x 4' wooden pallets to prevent contact with accumulated liquids. Dumpsters and trailers are designed such that contact with accumulated liquids is prevented.

Two catch basins collect liquids from the pad and these drains directly to the process sewer system. The drainage line is fitted with a valve, which is maintained in a normally closed position. In the event of a spill, the spilled material can be collected for disposal.

The containment system capacity is approximately 4,974 gallons. This would contain the volume of the largest container (a 5,000-gallon trailer, 95% full) and it would contain 10% of the total volume of containers (42,900 gallons, assuming 780 55-gallon drums), which is 4,290 gallons. Ramps and curbs prevent run-on to this pad.

ATTACHMENT 8 – TANK MANAGEMENT PRACTICES

There are five (5) tanks in the plant that are used and are permitted for the storage and treatment of hazardous waste for greater than 90 days. They are listed below:

- T-768 Waste Solvents (Toluene and Alcohol)
- T-769 Waste Solvents (Toluene and Alcohol)
-
- T-873 Waste Acid Solvents
- T-874 Waste Solvents (Toluene and Alcohol)
- R-72 Waste Hydrolysis Unit

Non-acidic waste solvents are transferred directly from the plant into tanks T-768, T-769, and T-874. Transfers to this tank are made by trailer, dumpsters, or pumped via pipeline.

Description of Tanks

T-768 (Key No. 6) and T-769 (Key No. 37)

T-768 and T-769 are identical 10,000-gallon carbon steel vertical tanks dedicated to storing ignitable, non-corrosive and non-reactive waste solvents mixtures of toluene and alcohol with a specific gravity of 0.800-0.900.

T-873 (Key No. 8)

T-873 is a 10,000-gallon glass lined steel tank dedicated to storing ignitable, corrosive and non-reactive mixtures of toluene, HCl, product lights and heavies, and a trace of methanol and ethanol. Its glass lining is inert to attack from the acid/toluene it stores. Failure of the glass lining could result from physical or thermal shock, causing the glass to spall. Tank T-873 is in a service, which does not expose it to either physical or thermal shock. Additionally, the steel shell of T-873 is visually checked on a daily basis as part of the required RCRA inspections. The specific gravity of the mixture is 0.800-0.900.

T-874 (Key No. 39)

T-874 is a 10,000-gallon carbon steel tank dedicated to storing ignitable, non-corrosive and non-reactive waste solvent mixtures of toluene and alcohol with a specific gravity of 0.800-0.900.

R-72 (Key No. 512)

R-72 is a 2,000-gallon carbon steel tank with a chlorobutyl rubber lining and is dedicated to treating wastes identified as miscellaneous ignitable wastes containing less than 10% total organic carbon (TOC), miscellaneous corrosive wastes, miscellaneous reactive wastes, miscellaneous spent non-halogenated solvents containing less than 10% TOC and miscellaneous spent halogenated solvents containing less than 10% TOC.

Description of Feed Systems, Safety Cutoff, Bypass Systems and Pressure Controls

The following information is excerpted from the elements manuals for each piece of equipment. Used in conjunction with the engineering flow sheet provided for each tank system; the following information will provide the required various ancillary tank systems. The information presented in this section is current as of November 2017. The Permittee reserves the right to modify this equipment and the ancillary systems as needed to accommodate the facility needs and the equipment service.

T-768

This tank system consists of the following elements of note.

- T-768 is a 10,000-gallon carbon steel tank located in the SW corner of the EP solvents tank farm. The materials of construction (carbon steel) are compatible with the stored waste.
- A ladder on the tank provides access to a deck on top.
- A manway is located on the tank.
- The tank is equipped with a bursting disc.
- A fill line connects to the top of the tank. The fill line for T-768 comes from the normal solvents transfer line in the pipe trail by the west dike wall.
- The tank is filled with a nitrogen blanket. The line has a pressure regulator, which controls pressure.
- A vent line tees with the supply line after the regulator. A valve on the vent line may be used to manually bleed pressure from the tank and a valve by the regulator may be used to block the nitrogen supply. A gauge by the regulator indicates pressure.
- Another vent line is located on top of the tank. Venting on this line is done automatically by an auto valve to control pressure on the tank.
- The tank's Level Indicator has two taps, the lower tap connects with the upper transfer line. The upper tap connects to the top of the tank.
- The LI on T-768 connects to the auto valve on the fill line. Levels above 85% automatically close this valve. At 90% an alarm is activated and another automatic valve is closed to stop feed to the tank.
- Manually operated sprinklers are present.
- The tank is contained in a diked tank farm with an epoxy coated concrete bottom. Spills can be contained for effective cleanup.

T-769

This tank system consists of the following elements of note.

- T-769 is a 10,000-Gallon carbon steel tank located in the SE corner of the EP solvents tank farm. The materials of construction (carbon steel) are compatible with the stored waste.
- A ladder on the South side of the tank provides access to a deck on top.
- T-769 has a bursting disc.
- A manway is located on the tank.
- A fill line connects to the top of the tank. The fill line for T-769 comes from the normal solvents line in the pipe trail by the West dike wall.
- The tank is filled with a nitrogen blanket. The line has a pressure regulator, which controls

pressure.

- A vent line tees with the supply line after the regulator. A valve on this vent line may be used to bleed pressure off the tank.
- A valve on the supply line by the regulator may be used to block the nitrogen supply.
- Another vent line is located on top of the tank. An auto valve is located on this line. This valve is used to control tank pressure by venting the excess. A pneumatic switch and valve tee off the supply line after the regulator.
- The Level indicator connects to the auto valve on the fill line. Levels above 85% automatically close this valve. At 90%, an alarm is activated and another automatic valve is closed to stop feed to the tank.
- Manually operated sprinklers are present.
- The tank is contained in a diked tank farm with an epoxy coated concrete bottom. Spills can be contained for effective cleanup.

T-873

T-873 has the following features:

- T-873 is a 10,000--gallon glass-lined steel tank located in the NE corner of the EP solvents tank farm.
- T-873 is used for storing acid solvents. The material of construction is therefore compatible with the stored wastes.
- A ladder goes to a deck on top of the tank.
- T-873 has bursting disc.
- The level indicator (LI) for T-873 is located on top of the tank. The lower tap is attached to a dip-tube on top of the tank. The high tap is attached to the top of the tank. The LI is connected to an auto valve which closes the feed to T-873 whenever the level reaches 85% or greater. At 90%~~%,~~ an alarm is activated and another automatic valve is closed to stop feed to the tank.
- The tank is filled with a nitrogen blanket. The line has a pressure regulator₁ which controls pressure.
- At the end of the vent line₁ a chem hose has been attached. This hose carries vent gases to a 55-Gallon drum of water that serves as a scrubber.
- The tank is contained in a diked tank farm with an epoxy concrete bottom. Spills can be contained for effective cleanup.

T-874

T-874 has the following features:

- T-874 is a 10,000--gallon steel tank located in the NW corner of the EP solvents tank farm. The materials of construction are compatible with the stored wastes.

- A ladder leads to a deck on top.
- T-874 has bursting disc.
- A manway is located on the NW side.
- The tank is filled with a nitrogen blanket. The line has a pressure regulator_x which controls pressure.
- The level indicator (LI) for T-874 is located on top of the tank. The lower tap is attached to a dip-tube on top of the tank. The high tap is attached to the top of the tank. The LI is connected to auto valve LV-874 which closes the feed to T-874 whenever the level reaches 85% or greater. At 90%, an alarm is activated and another automatic valve is closed to stop feed to the tank.
- The tank is contained in a diked tank farm with an epoxy coated concrete bottom. Spills can be contained for effective cleanup.

R-72

R-72 has the following features:

- R-72 control panel is located in the dewatering building.
- A safety disc is located on top of R-72.
- R-72 is equipped with a thermocouple to regulate temperature. A high temperature reading of activates an alarm on the control panel and causes the feed valves to close.
- R-72 is equipped with a top-mounted agitator. The agitator shaft and four (4) impellers are coated with rubber. The agitator seal is cooled by water from the clean skimmer. Used water from the seal is routed to the process sewer one-inch line. The agitator motor must be running in order for the waste feed valves to open. A light next to the motor switch indicates that the agitator is running.
- The tank is filled with a nitrogen blanket. The line has a pressure regulator_x which controls pressure. A low- pressure reading or a high pressure of 3 psig activates an alarm on the control panel. A High/High pressure reading activates an alarm on the control panel and closes the waste feed valves.
- There is a check valve installed to prevent back flow from R-72.
- R-72 vent stream exits through the spray contactor on top of R-72. The vent stream is routed from the spray contactor to the scrubber.
- Water is fed to R-72 from the primary clarifier recycle or the clean skimmer. An indication of low flow on the flow controller activates an alarm on the control panel and causes the waste feed valves to close. There is a check valve on the direct line to prevent back flow from R-72.
- The direct line enters the top of R-72 and water is added through the spray contactor. A water level is maintained in R-72 to perform hydrolysis. The level in R-72 within a predefined range in order for the waste feed valves to open.
- There is a valve on the bottom of R-72 that allows it to drain. The drain from R-72 is routed to the terminal manhole.

- A high-level indication of 78% activates an alarm on the control panel. The level control valve fails open when a High/High level of 85% is indicated. A high-level switch is installed in the top of R-72 as redundant protection. The level control valve fails open when the high-level switch, senses a High/High level of 85%. A High/High level alarm from either the level controller or the high-level switch causes the scrubber water feed valve to fail open.
- Nitrogen is supplied to R-72 unit from the plant header system.
- A line is installed to feed A-1100 waste to R-72. There is a hose connection on the feed line to R-72 for transferring dumpsters. A nitrogen line is provided to pressurize dumpsters. It is protected by a safety valve.
- Feed flow is started and stopped by a motor valve. The valve is controlled by operating a hand switch on the control panel and pushing a reset button at R-72. The valve is interlocked with several conditions and will only work if they are met.
- The nitrogen purge line is equipped with a restrictive orifice to regulate the flow of the purge into the feed line. A pressure alarm will detect a pressure buildup in the line due to the line plugging and activate an alarm on the control panel.
- The waste feed line enters R-72 through a tube, below the water level. An emergency shutdown switch, located at the dumpster station, will close the feed valve when activated.
- A line is installed to feed waste silane to R-72. A high flow or a low flow indicated on the flow controller will activate an alarm on the control panel.

Ignitable, Reactive, and Incompatible Wastes

T-768 and T-769

T-768 and T-769 have inert gas blankets (nitrogen) on their vapor spaces. These tanks are protected by a manually operated sprinkler system. The minimum distance between these tanks is 66 inches. The nearest important building on the plant property is located over 75 ft. from these tanks and the plant fence line is over 200 yards away. Buffer zone requirements, as contained in Table 2-2 of the NFPA's *Flammable and Combustible Liquids Code*, are met.

Incompatible wastes are not placed in these tanks. T-768, T-769 and T-874 are dedicated to transfers from "less than 90 days" plant waste solvent storage tanks. When waste needs to be transferred to T-768, T-769, or T-874 from "less than 90 days" tanks, the production unit has the waste checked for pH, water, total solvents, chloride, silanic hydrogen, and nonvolatile residues. The EP Department is contacted and informed of the results. If the results are within acceptable range, the transfer is made. This procedure assures a compatible waste stream.

T-873

T-873 has an inert gas blanket (nitrogen) on the vapor space and it is protected by a manually operated sprinkler system. This tank is located in a tank farm with tanks T-768, T-769 and T-874. The minimum distance between these tanks is 66 inches. The nearest important building on the plant property is located over 75 ft. away and the plant fence line is over 200 yards away. Buffer zone requirements, as contained in Table 2-2 of the NFPA's *Flammable and Combustible Liquids Code* are met. T-873 accepts transfers only from T-100, a "less than 90 days" storage tank located in the Silanes Department. T-873 is piped directly to T-100. The Silanes Department Reserves T-100 for acid toluene and silane heavies. Incompatible wastes such as alcohols are transferred to another tankage for disposal.

T-874

T-874 has an inert gas blanket (nitrogen) on the vapor space and it is protected by a manually operated sprinkler system. This tank is located in a tank farm with tanks T-768, T-769 and T-873. The minimum distance between these tanks is 66 inches. The nearest important building on the plant property is located over 75 ft. away and the plant fence line is over 200 yards away. Buffer zone requirements, as contained in Table 2-2 of the NFPA's *Flammable and Combustible Liquids Code*, are met.

See T-768 and T-769 for information on the management of incompatible wastes.

Containment and Detection of Releases

In order to prevent the release of hazardous waste or hazardous constituents to the environment, secondary containment that meets the requirements of 40 CFR 264.193 has been provided for all permitted tank systems.

Controls and Practices to Prevent Spills and Overflows

Information pertaining to equipment in place to guard against spills and overfilling is found here and includes: check valves, level sensing devices, high level alarms, automatic feed cutoffs or bypass provisions plus operational safeguards. In addition, all the permitted hazardous waste tanks are operated at a maximum level of 85% of their design capacity. The plant's engineering department, operations departments, R & D department, and Environmental Protection department all evaluate tanks for the proper material of construction for the intended service. This insures there is no failure of the tank or ancillary equipment, or containment system due to an incompatibility with the managed waste.

Tank Inspection

Inspection of Hazardous Waste Solvent Tanks (T-768, T-769, T-873 and T-874) are completed by the Kiln Operator on a daily basis.

Shell thickness tests are performed on tanks T-768, T-769, T-874, and T-452. This is an ultrasonic thickness test that is performed per recognized engineering standards. If this test indicates that the shell corrosion allowance has been exceeded, the tank is removed from service and repaired or replaced.

Tanks T-768, T-769, and T-874 are waste solvent storage tanks. If any of these tanks have to be removed from service, their contents will be incinerated on-site in the plant incinerator (kiln), transferred to another hazardous waste storage tank of compatible material, stored in tank trucks, or shipped off-site for recovery or to be destroyed.

If any of tanks T-768, T-769, or T-874 need to be emptied for inspection of the interior, one of the following methods (listed in order of preference) would be used to dispose of its contents:

- Burn the contents at the kiln (2-3 days required to empty a full tank.)
- Transfer contents to T-768, T-769, or T-874 via fill line. All handle the same waste.
-
- Transfer contents to a tank trailer approved to handle flammable liquids.

If tank T-873 must be emptied for inspection of the interior, one of the following methods (listed in order of preference) would be used to dispose of its contents:

- Burn the contents in the kiln (2-3 days required to empty a full tank).
- Empty T-768, T-769, or T-874 and transfer T-873 contents to it. (Storage of acid toluene in these tanks for less than 30 days would not cause a corrosion problem.)

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ATTACHMENT 9 - LANDFILL OPERATION

The facility operates a hazardous waste landfill, known as the No. 2 Landfill. This 623,000 cubic yard landfill is used to dispose of dewatered sludge and various plant-generated hazardous and nonhazardous solid wastes (crushed buckets, hoses, refuse). The dewatered sludge consists of the primary and secondary wastewater treatment sludge and accumulated solids from the Diversion Basin and Equalization Basin.

The No. 2 landfill design was approved by both the State of West Virginia and Region III of the USEPA at the time of the original construction in 1979 and the upgrade undertaken in 1985. The landfill was designed to meet the minimum technological requirements of the Hazardous and Solid Waste Amendments of 1984. Because of the existing approval by the agencies and prior submittal of associated design data, plans and reports, the following sections are only a summary of the comprehensive data already submitted to the agencies.

The following reports on the landfill design were provided in the 1988 RCRA Part B Permit Application and can be referenced for detailed information on the design and operation of the Number 2 Landfill:

- An Engineering Report for the landfill dam prepared by John James Engineering entitled *Analysis and Recommendations for Constructing a Waste Disposal Dam in two stages - Sistersville, Tyler County, W.V.*
- Construction specifications for Phase I of the landfill construction entitled *Construction Specifications for Earth and Rock Fill Barrier, Pipelines, Access Road, and Drainage. For Surface Impoundments - Sistersville, West Virginia*
- A description of the No. 2 landfill Phase II construction prepared by Union Carbide and Triad.
- An Engineering Report on the landfill Phase II work prepared by Triad entitled *Design Report, Drawings and Specifications for Phase II Completion - No. 2 Surface Impoundment Sistersville, West Virginia.*
- Construction specifications for an open stormwater diversion channel around the north and east bank of the landfill.

An expansion project in 2015 increased the capacity of the landfill by approximately 12% by revising the spillway and adding a concrete wall to the top of the dam. Details on the expansion project are included in the above referenced drawings.

List of Wastes

See Module VI of this permit for a complete listing of wastes that may be disposed in the No. 2 Landfill.

Ignitable and reactive wastes (as defined in 40 CFR 261.21 and 261.23) are not placed in this landfill. Incompatible wastes are not placed in this landfill.

Asbestos Wastes will be managed in compliance with Section 4.13.b of Title 33 CSR Series 1, which is found within the Landfill Performance Standards of the West Virginia Solid Waste Management Regulations. The permittee will ensure every individual involved in the management of asbestos wastes is protected from exposure as provided for in the above referenced rule. Disposal of friable and nonfriable asbestos materials will be managed to meet the following conditions:

- 1) Asbestos waste will be placed in an identified area of the landfill. The liner of the landfill is designed and constructed to meet the minimum liner requirements set forth in 33 CSR I.5.4.b.
- 2) Asbestos waste will be placed in the excavation in a manner to ensure the integrity of bags, wrappings, or containers.

- 3) Asbestos waste will not be compacted until a sealing layer of soil, at least one (1) foot thick, has been placed over the waste.
- 4) Asbestos waste will be covered with at least one (1) foot of soil at the end of each day of operation.
- 5) The asbestos disposal area will be identified with appropriate signage.

Operation and Maintenance

The No. 2 Landfill was designed and constructed in two phases. The initial construction, Phase I, was completed in 1979 to allow approximately 60 million gallons of disposal capacity. This work included construction of the landfill embankment, a three-foot thick compacted clay liner to an elevation of 825 feet and a drainage/leachate collection and removal system. The leachate collection system consists of a one-foot thick sand drainage blanket above and below the unit's clay liner. Drain lines in this sand blanket remove liquids from above and below the clay liner. This leachate is collected and treated on-site in an NPDES permitted WWTU.

The Phase II construction, completed in 1985, extends the liner system to allow disposal to the originally permitted volume of 112,000,000 gallons. The Phase II work included completion of the landfill embankment, a liner system composed of a 100-mil HDPE liner underlain with from two to six feet of compacted clay (elevation 825 to 840 ft.), a solids disposal area and revisions to the emergency spillway.

In 1984, two areas of the original three-foot thick clay liner were reinforced with a blanket of 60 mil HDPE. This HDPE liner was installed to provide additional groundwater contamination protection.

The 2015 expansion project increased the capacity of the landfill by about 68,000 cubic yards by revising the spillway, adding a concrete wall to the top of the dam, and increasing the height of the earthen embankments and liner system around the perimeter of the landfill. These improvements increase the final waste elevation from 836 feet to 840 feet and are designed to provide the emergency storage capacity required by WV Dam Safety regulations to accommodate the Probable Maximum Precipitation (PMP) design storm.

Solid wastes are transported from the plant to this unit via truck. They enter the landfill at the solid waste disposal area located at the north end of the unit. Only the hazardous wastes allowed by the permit and a host of compatible nonhazardous wastes are disposed of in this landfill.

The emergency spillway elevation is 841 feet and the top of the dike is 845 feet. The spillway insures that the dike will not be overtopped in the event of an emergency. The spillway and dike are designed to handle the Probable Maximum Precipitation (PMP) of 27.1 inches of rain in 6 hours. Shipments of wastes to this unit can be discontinued at any time if a threat of overtopping should arise.

The Sistersville Plant personnel having responsibility for this unit inspect the landfill dike several times during the year. This inspection is a part of the overall program for maintaining the integrity of the landfill. While inspecting the dike, personnel look for signs of stress vegetation, seeps, slips, erosion, damage by burrowing animals, and plants with root systems that could damage the dike. Periodically, maintenance personnel are assigned to clearing brush and woody plants from the dike. In the event that any damage is observed, repairs would be immediately initiated to mitigate further damages and to restore this unit's structural integrity.

The No. 2 Landfill is inspected daily for amount of freeboard. If it should become necessary to remove this unit from service the following steps will be taken:

- 1) Waste shipments to the landfill will immediately be stopped.
- 2) If any surface leakage has occurred, it will be contained and collected. Containment will be achieved by building temporary clay dikes using on-site equipment (bull dozer, backhoe, dump truck) or by closing a sluice gate locate on Sugar Camp Run downstream of the landfill

(Drawing B-879343). By closing the aforementioned sluice gate, a 2.7 million-gallon catch basin is created.

Any contained leakage will be collected using a vacuum truck or a portable pump and disposed of in the plant biological wastewater treatment unit or stored in one of several sludge storage tanks for future disposal. Solids will be collected, dewatered if necessary, and then landfilled.

- 3) Once the area of the leak has been determined, repairs will be initiated if the leak occurred above the waste level. This would involve removing contaminated soil, sampling and analysis to insure complete decontamination, and repair of the leak area to reassure the integrity of the unit. If the leak is below the waste and cannot be stopped the unit will be closed.

Run-on and Run-off Control Systems

This landfill incorporates diversion ditches to minimize run-on from the surrounding area. These ditches are designed to handle the PMP and route it from this unit. Precipitation that falls on this unit is removed by an existing pumping system that is capable of handling 250 gpm. Using these systems, run-on to the landfill is minimized and any run-on that does accumulate is removed in a timely manner. Management of surface water accumulation is one purpose of the landfill inspections conducted weekly and after any storm event. These inspections enable us to routinely monitor the liquid level and remove excess water as soon as possible after a storm event. All the removed landfill supernatant is discharged to the plant's process sewer collection system and discharged to the plant's wastewater treatment unit.

This landfill is designed to handle the PMP of ~~2.74~~27.1 inches of rainfall in six (6) hours.

Control of Wind Dispersal

Wind dispersal of particulate matter at this unit is controlled by placement of a protective soil cover over the wastes following disposal. A minimum of six (6) inches of clean soil is placed with a ~~bulldozer~~bulldozer over the wastes that may be subject to wind dispersal. In addition to this soil cover, the location of this unit helps to minimize wind dispersal. This unit is in a valley surrounded by hills on three sides. These wooded hills act as a natural wind barrier for the landfill.

Finally, the physical characteristics of the wastes that are placed in this unit result in minimal wind dispersal. No dry, powdery wastes are disposed of in this landfill. Most of the waste placed in the landfill is dewatered sludge from the plant's WWTU. Although this dewatered sludge passes the free liquids paint filter test, they do contain from 70-75% water. This moisture content results in a waste with a bulk density sufficiently high enough to minimize wind dispersal. Because of these properties, an exemption has been in place for many years waiving the requirement to provide daily cover for the dewatered sludge disposed in the landfill. The exemption was originally issued by the West Virginia Division of Natural Resources (WVDNR), now WVDEP, and is still applicable to this waste stream.

Liquid in Landfills

No bulk or uncontainerized liquid wastes or wastes containing free liquids will be placed in this landfill as specified under Section 33.20.10 of the West Virginia Hazardous Waste Management Regulations (WV HWMR). All wastes, hazardous and nonhazardous, that enters this unit pass the "no free liquids" test.

Containerized Waste

All containers to be placed in this landfill will be filled or crushed to minimize void spaces prior to placement. This will be done in accordance with 40 CFR 264 Subpart N. To comply with this requirement, partial drums of solid wastes will be filled to at least 90% of capacity with a non-degradable material such as soil, sand, or absorbent. Five-gallon buckets will be crushed with heavy equipment and empty 55-gallon drums will be crushed in the plant's hydraulic drum crusher. Overpacked containers (i.e. drums) will not be placed in this landfill unless the above requirements of 40 CFR 264 Subpart N are complied with.

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ATTACHMENT 10

- MONITORING WELL LOCATIONS MAP

ATTACHMENT 11 – SAMPLING AND ANALYSIS PLAN

Description of Sampling/Analysis Procedures

Samples are collected from the monitoring wells as suggested in USEPA's RCRA Groundwater Monitoring Draft Technical Guidance Document (EPA\530-R-93-001 November 1992). The facility has dedicated sampling equipment for each well, therefore, the possibility of cross contamination during a sampling event is remote.

Prior to carrying out a sampling event, the groundwater elevation (determined by the wetted-tape method) is taken at the wells selected for sampling during the sampling event. Select wells are also checked for the presence of LNAPL. Water depths are measured directly and subtracted from the surveyed top-of-casing elevation to give groundwater elevation.

- Before the actual sample collection takes place the well is purged of a volume sufficient to stabilize water quality indicator parameters of dissolved oxygen, specific conductivity, pH, and temperature.

All RCRA groundwater monitoring wells, as identified in the current permit, are equipped with well wizard sampling pumps (bladder pumps).

Volatiles (VOA) Sampling / Analysis

Samples are collected in no-headspace (VOA) vials at a rate less than or equal to 100 ml/min. This low sampling rate helps ensure that particulates, immobile in the subsurface under ambient conditions, are not entrained in the sample and that volatile compounds are not stripped from the sample. One sample per well will be collected. After the samples are collected, they are stored in a cooler of ice until delivery to the laboratory is complete. At the time the samples are collected, a chain of custody form is initiated by the sampler and passed on to the laboratory upon sample delivery. Samples are maintained at a temperature of 4°C until the analyses are completed.

Analysis for volatile constituents are carried out by a State certified laboratory. The sample containers are properly preserved by acidifying them with HCl to a pH less than 2.0 s.u.

pH Monitoring

Throughout the sampling event, pH measurements are taken at each well that is sampled. The pH measurement is taken utilizing a portable field instrument and the result is recorded on the sample log sheet. Before the pH measurement is taken, the probe is placed into a known buffer solution and the obtained result is compared to the actual buffer value. pH instrumentation is calibrated in accordance with manufacturer's instructions.

Chain of Custody

As the samples are collected at each selected monitoring well, appropriate information is entered onto the sample log sheet form and the chain of custody form.

The Chain of Custody (COC) will be filled out for each group of samples taken each day and transported to the laboratory. The purpose of the COC is as follows:

- The samples are handled by as few people as possible.
- To identify the analysis to be performed on each group of samples.
- To contain the following information: Sample number, date and time of collection, source of sample, preservatives (if necessary), analysis required, and the sampler's name. The form should be signed, timed, and dated by the sampler.

- Acknowledge the sample's transfer of possession. The person receiving the samples should sign the COC, date, and time received.
- The laboratory personnel maintain close sample control so that sample quality and COC is maintained.
- Acknowledgment that sample analyses is complete. The laboratory is to return the COC with the sample results.

Procedures for Establishing Background Quality

Background Wells

Samples from the background monitoring wells will be collected and analyzed as discussed above. The Sistersville Plant proposes each area's upgradient groundwater monitoring well be considered as the background well and the result of each constituent will be considered the background constituent. Background groundwater monitoring wells are listed in Table E-1.

TABLE E-1: BACKGROUND WELLS

The Sistersville Plant does not do any on-Site disposal of Lab Packs as defined by 40 CFR 264.316. Periodically a Lab Pack service is contracted to dispose of the resulting wastes at a properly RCRA permitted Treatment, Storage, and Disposal Facility.	The Sistersville Plant does not do any on-Site disposal of Lab Packs as defined by 40 CFR 264.316. Periodically a Lab Pack service is contracted to dispose of the resulting wastes at a properly RCRA permitted Treatment, Storage, and Disposal Facility.
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Indicator Parameters for Groundwater Monitoring

Samples from the monitoring wells will be taken as discussed above. The indicator parameters that are

currently subject to the statistically significant increase tests are listed in Table E-2.

TABLE E-2: INDICATOR PARAMETERS

EP Area	#1 Landfill Area	#2 Landfill Area
Acrylonitrile	Acrylonitrile	Acrylonitrile
Chlorobenzene	Chlorobenzene	Chlorobenzene
Chloromethane	Chloromethane	Chloromethane
Toluene	Toluene	Toluene
pH	pH	Ethylbenzene
		Xylene

For the pH parameter, a statistically significant increase will be deemed to have occurred if the sampling result is outside the range of 5.0 and 8.5 s.u.

For parameters other than pH, a statistically significant increase will be determined utilizing appropriate statistical procedures.

Statistical Procedures

When comparing the concentrations of the monitoring parameters to background data, methods described in EPA's *Interim Final Guidance and Addendum to Interim Final Guidance on Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities* issued in 1992 will be used. The exact statistical procedure will depend on the normality of the data and the number of non-detects. The 0.05 level of significance will be used to test whether any significant change has occurred in each parameter, in each well. Both current and historical data will be used for comparison. The downgradient monitoring well results will be compared to the background well results for each indicator parameter.

Detection Monitoring Program

Since the issuance of the Sistersville plant's RCRA Part B permit, the facility has been operating a detection monitoring program in compliance with the permit's requirements. The groundwater monitoring results have been submitted to the WVDEP Office of Water and Waste Management on an annual basis. We refer the agency to past submittals of annual reports as supporting data documenting the absence (as well as presence) of hazardous constituents in the groundwater.

Background Groundwater Concentration Values for Proposed Parameters

With the exception of the background pH values, all background concentrations of the proposed indicators are less than the laboratory's method detection limit. The laboratory's method detection limit is determined as described in the attachment of the permit application. The proposed background concentrations are substantiated by data submitted in annual groundwater monitoring reports.

Statistically Significant Increase in Any Constituent of Parameter Identified at Any Compliance Point Monitoring Well

Determination of a statistically significant increase in any monitoring parameter would be made utilizing the procedure discussed above.

Resampling and Reporting

If for any parameter and any downgradient well, a significant increase in concentration occurs that was not previously observed, the sampling and analysis procedure will be repeated for that parameter and well. If this second round of analyses also indicates a statistically significant increase, then an increase in that

parameter is verified in that well. In such a case, unless otherwise agreed upon by WVDEP and the Sistersville Plant (e.g. in the case of repeated statistical triggers for parameters in wells that are deemed of no true significance), the facility will, in accordance with WV HWMR.

- Notify the Chief of this finding within seven (7) days, detailing which parameter in which well has changed.
 - Resample each well that showed a statistically significant change for Appendix IX compounds as listed in EPA Regulations 40 CFR 264.
 - If any Appendix IX compound in a resampled downgradient well exceeds the method detection limit, then a background well will be analyzed for these detected compounds. If detected Appendix IX compounds in the downgradient well(s) do not exceed those detected in the background well, we will continue to monitor groundwater parameters.
-
- As long as parameters do not statistically increase above the entire data set of previous values for that parameter and downgradient well, even if they remain above the background well, no further Appendix IX analyses will be required.
 - Should parameters statistically increase above that wells' previous values, reanalyze for Appendix IX compounds.
 - Within 60 days, the facility will submit to the Chief a written report detailing any proposed corrective action and/or proposed changes to the groundwater monitoring system, sampling analysis, or statistical procedures to ensure that the Sistersville Plant regulated units are in compliance with the Groundwater Protection Standard Regulations.

ATTACHMENT 12 – CONTINGENT CORRECTIVE ACTION PLAN

Contingent Corrective Action Plans

Below are generally outlined actions that would follow detection of a significant increase in groundwater monitoring parameters and/or the subsequent detection of hazardous constituents at the Point of Compliance in any other areas of the site.

Environmental Protection

Upon finding hazardous constituents in the groundwater, the first action would be to identify the source of contamination and isolate, repair, or eliminate it if possible. The EP Area has several land storage, treatment, and disposal units that are either still in service or closed. The identity of groundwater constituents may indicate which land units are likely sources. Additional analyses may yield useful evidence.

Groundwater in the EP Area flows generally to the south. The Sistersville Plant presently has several groundwater monitoring wells installed downgradient of the EP Area and its Point of Compliance wells. To determine the extent and direction of constituent flow, groundwater would be sampled from appropriate wells located downgradient and cross gradient.

The Sistersville Plant would seek hydrogeologic consultation ~~from~~from sources either internal or external to the corporation

Once the extent of the contamination has been defined, Corrective Action, if necessary, would most likely be to pump groundwater from the affected area and treat it appropriately. Low levels of organic constituents, most metals, and acidic or basic constituents could be effectively treated in the plant's wastewater treatment unit. As can be seen in the groundwater contour maps and as concluded in the *Comprehensive Hydrogeologic Study*, any contamination detected in the EP Area would be captured by the groundwater recovery well. The groundwater recovery well ultimately discharges into the wastewater treatment system, where it is further treated.

No. 1 Landfill

Upon finding hazardous constituents in the groundwater, the first action would be to identify the source of contamination and isolate, repair, or eliminate it, if possible. Because the No. 1 Landfill is inactive and closed, we have a few options for fixing leakage, should it occur. However, the Sistersville Plant would seek hydrogeologic consultation from sources either internal or external to the corporation to evaluate what should be done.

No true aquifer has been identified in the vicinity of the landfills. Rather, groundwater is believed to flow in the general direction of the axis of the Sugar Camp Run valley. If hazardous constituents were found in the wells located along the side of the landfill (Wells 33 and 34), we would examine the wells located along the base of the dam, which would include two wells not in the groundwater monitoring network (Wells D & R) plus the four which are in the network (Wells S, 35, 44, and 45). Most likely, groundwater flows from the area of these higher elevation wells to the lower ones. Should contamination be found in the higher wells and not in the lower wells (i.e. to the north by northwest), either the contaminants have not yet gone that far or the flow path is further to the west.

In this case, we would use the groundwater monitoring wells installed to the west of the No. 1 Landfill, down in the plant proper area (Wells 5401 and 5501). We would analyze groundwater from these wells and determine groundwater elevations/contours to determine groundwater flow direction from the No. 1 Landfill into the Plant area.

Should contamination be found in the lower wells and not in the higher wells, again Wells 5401 and 5501 would be examined. If necessary, the Sistersville Plant would install additional wells (or well clusters) downgradient of the contaminated well(s), between the No. 1 Landfill and the Plant area. Groundwater elevations and quality would be determined as we have in the past, to further define the extent of contamination.

Once the extent of contamination is determined, design data would need to be determined for a potential groundwater recovery system. As the area is quite heterogeneous, groundwater flow is highly locally site-specific. Pumping tests would likely be required to determine whether pump-and-treat would be a viable option here.

If groundwater recovery wells appear likely to be ineffective, alternative of supplemental systems may be necessary. For example, a recovery trench might be practical and effective for collecting groundwater. The water could either be treated in the Plant's wastewater treatment unit or a separate system (e.g. carbon absorption) might be preferable.

If supplemental systems are deemed necessary, the Sistersville Plant would apply for a permit modification.

No. 2 Landfill

Upon finding hazardous constituents in the groundwater, the first action would be to identify the source of contamination and isolate, repair, or eliminate it, if possible. In addition to the groundwater monitoring wells discussed below, other diagnostic tools are available for use at the No. 2 Landfill as needed:

- Slope indicators are used to verify that the dam has remained stable.
- Piezometers are installed in the dam to detect hydrostatic pressure in the dam.
- We can visually inspect the inside wall of the landfill to determine the integrity of the liners.
- We can sample and analyze water in the landfill underdrain and overdrain, looking for similarities and contrasts between constituents in that water and in the monitoring wells.

The Sistersville Plant would seek hydrogeologic consultation from sources either internal or external to the Corporation. With information such as that above plus other investigations, the plant would evaluate the possibility of correcting any leak from the landfill.

Hydrogeologic conditions at the No. 2 Landfill are similar to those at the No.1 Landfill. Groundwater flow is primarily through cracks in the bedrock and generally flows downslope toward Sugar Camp Run. The single well-located upslope of the dam is Well 100A.

Several wells are installed at the bottom and side of the dam. If contamination is found in any of the relatively upslope or upgradient wells, we will examine the others downslope for clues to contaminant travel. If contamination is found in a well, which is relatively downslope or downgradient among this set of wells, we would need additional wells or clusters to determine the extent and direction of contaminant flow. We will also examine the wells at the eastern edge of the plant (5401 and 5501). However, they are likely too far from the landfill to be of any use.

Analogous to the No.1 Landfill, once the extent of contamination is determined, design data would need to be determined for a potential groundwater recovery system. As the area is quite heterogeneous, groundwater flow is highly locally site-specific. Pumping tests would likely be required to determine whether pump-and-treat would be a viable option here.

If groundwater recovery wells appear likely to be ineffective, alternative or supplemental systems may be necessary. For example, a recovery trench might be practical and effective for collecting groundwater. The water could either be treated in the wastewater treatment system or a separate system (e.g. carbon absorption) might be preferable.

If supplemental systems are deemed necessary, the Sistersville Plant would apply for a permit modification.

Zero Slope Criterion

The zero slope criteria is met when the slope of the plot of a monitoring parameter versus time is deemed to be zero, per the following:

- 1) The data from four consecutive sampling events will be examined on a well-by-well basis, each monitoring parameter being plotted versus time.
- 2) If the data are of linear form, then the least-squares linear regression will be fitted to the data. The slope of the regression line will be the estimated slope.
- 3) If the data are on non-linear form, then the least-squares exponential curve will be fitted to the data. The estimated slope will be the first derivative of the curve at a value in time half way between the two most recent sample points.
- 4) The estimated slope will be deemed to be zero if:
 - a. That slope is less (or greater for pH) than or equal to zero or the yearly change of the parameter is less than the average overall precision of the analytical method(s) used and as described in paragraph 5 below; and
 - b. The data for four consecutive sampling events are lower than the maximum (or greater than the minimum for pH) during all previous monitoring, since commencement of corrective action.
- 5) The average overall precision for each parameter shall be calculated using generally accepted methods for estimating analytical procedure quality control and precision.